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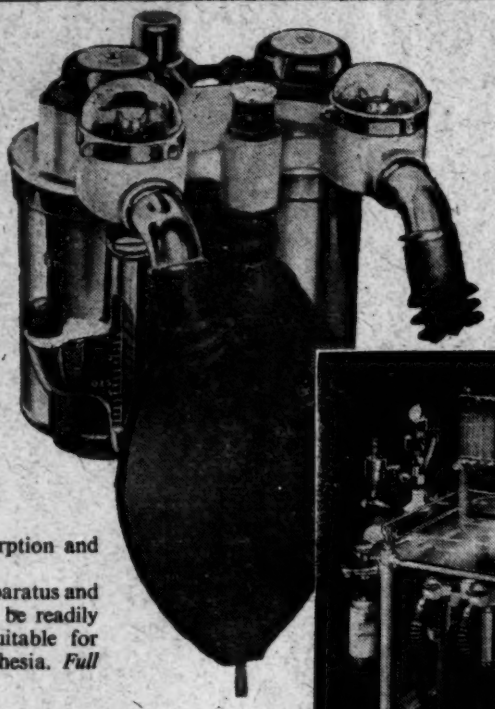

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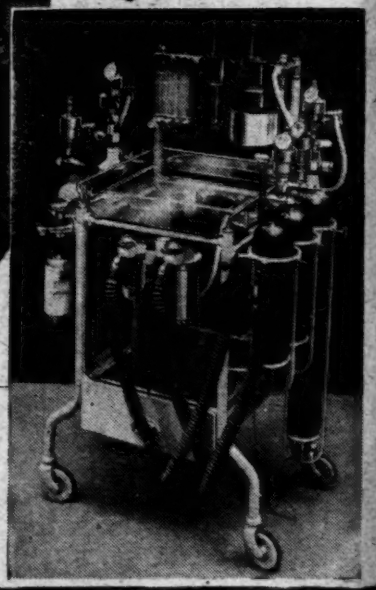

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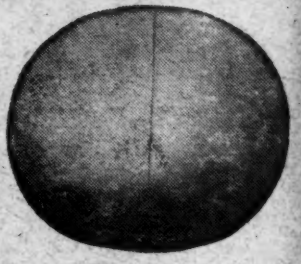

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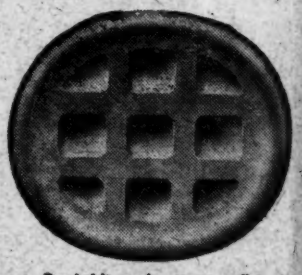

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LONDON SATURDAY AUGUST 2 1952

COMPARISON OF LIVER EXTRACT AND VITAMIN B_{12} (CYANOCOBALAMIN) IN MAINTENANCE TREATMENT OF PERNICIOUS ANAEMIA

BY

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The discovery of vitamin B_{12} (cyanocobalamin) (Smith and Parker, 1948; Rickes, Brink, Koniuszy, Wood, and Folkers, 1948), and the investigations which have demonstrated that it is probably identical with Castle's extrinsic factor, have shed further light on the pathogenesis of the megaloblastic anaemias. The effect on medical practice has been less. Indeed, Beckman (1950) says that in the treatment of pernicious anaemia, apart from the fact that it will not cause species sensitization, "it is not superior to parenteral liver extract." We believe that this is not the case and that many physicians and general practitioners have failed to realize the special merits which vitamin B_{12} possesses.

It is true that *adequate* treatment with liver extract is perfectly satisfactory. Pernicious anaemia is, however, a disease of variable severity which in its early stages tends to show remissions, and the dose of liver extract required to keep a patient in good health may thus differ greatly from case to case and from time to time. It is the belief of many physicians that liver extracts, at least those which have been available in Great Britain, have fallen in potency since the outbreak of the second world war, and evidence of this has been produced by Mollin (1950). Many patients receiving injections of liver extract from their general practitioners and referred to hospital for blood counts have been found by us to have levels of haemoglobin and red cells well below the optimum. The demonstration (Girdwood, Carmichael, and Woolf, 1950) that the vitamin B_{12} content of many samples of liver extract sold in this country is variable and often low lends further support to the view that we have been treating a disease of variable severity with preparations of variable activity. If this is true, the great practical advance in the introduction of vitamin B_{12} is the possibility of giving a fixed and indeed a large dose of a pure principle of known high activity. In cases of pernicious anaemia in relapse it has been shown by Ungley (1949, 1951) and others that a single dose of vitamin B_{12} of the order of 10 μg. will usually give a satisfactory reticulocyte response and rise in the red-cell count. Its ability to maintain patients in good health and with a normal blood picture over long periods is less clearly defined.

When vitamin B_{12} first became available we were fortunate in having under continuous hospital supervision a moderately large series of patients suffering from pernicious anaemia. The results of treating these and other patients with vitamin B_{12} for two years are now reported. The effects of previous treatment with liver extracts were in many cases available for comparison.

Method and Results

We have now had under our care 60 patients with pernicious anaemia whom we have treated with vitamin B_{12}. Our conclusions are, however, based on a detailed analysis of three groups of patients; (1) a group of 22 who had previously received injections of liver extract for relatively long periods and whose progress was then observed for at least two years after a change of treatment to vitamin B_{12} injections; (2) two groups each consisting of 10 patients who had received either liver extract alone or vitamin B_{12} alone from the onset of the illness. In the remaining 28 patients treated with vitamin B_{12} the periods of observation were shorter or else the haematological observations had been made at too long intervals to allow of satisfactory statistical analysis. In these, however, the response to treatment was similar to that observed in the more fully investigated groups, and nothing was noted in them that would lead us to modify our general conclusions in any way.

The 22 patients in the first group had attended the clinic regularly and had had blood counts carried out at approximately three-monthly intervals. Most had received their injections of liver extract at the clinic, and all were seen and questioned about their progress at each visit. All were patients who were known to have had pernicious

anaemia for relatively long periods. Vitamin B_{12} was given to these cases and blood counts and clinical examinations were carried out every six to eight weeks. Ten micrograms of vitamin B_{12} was initially substituted for each 1 ml. of a liver preparation, and injections were given at the same relative times. Later the period between injections was lengthened so that some patients were receiving injections only once a month. They have now all been treated with vitamin B_{12} for at least two years.

The results in these 22 patients are shown in Table I. The mean haemoglobin and the red-cell count have been calculated for the period on liver treatment, which ranged between 8 months and 6 years (average 34 months). The mean values for the first 18 months on vitamin B_{12} appear in column A and those including the subsequent six-monthly period in column B. An examination of these figures shows that in 17 out of the 22 patients the mean values have increased while on vitamin B_{12} therapy. These results might be regarded as suggesting an improvement brought about by the change to vitamin B_{12}. We are, however, fully aware of the errors inherent in haematological observations. These were reduced as much as possible by the estimations being carried out in one department, using the same standard methods throughout. Nevertheless there was considerable variability in the observations in each patient while on either form of treatment, and a reliable comparison cannot be made by use of the means alone. A more detailed statistical analysis has accordingly been carried out on the individual results from which the means in column B (Table I) were calculated, in order to take this variability into account. In this way it was shown that vitamin B_{12} gave a significantly better result than liver extract in both haemoglobin and red-cell counts. This difference was obtained by testing the "between treatments within patients" variance against the "within treatments" variance in Table II. The variance ratio was significant at the 1% level of probability (Fisher and Yates, 1948).

TABLE I.—*A Comparison Between the Average Haemoglobin Concentrations and Red-cell Counts in Patients on Maintenance Treatment with Liver Extracts and for at Least Two Years on Vitamin B_{12}*

Case No.	Liver Extract: Preparation	Liver Extract: Injection (ml./month)	Liver Extract: Av. Hb % (100%=14·8 g.)	Liver Extract: Av. R.B.C. (mill./c.mm.)	Vitamin B_{12}: µg. Vitamin B_{12} per month	Vitamin B_{12}: Av. Hb % (100%=14·8 g.) A	Vitamin B_{12}: Av. Hb % (100%=14·8 g.) B	Vitamin B_{12}: Av. R.B.C. (mill./c.mm.) A	Vitamin B_{12}: Av. R.B.C. (mill./c.mm.) B
1	C	32	81	3·97	160	91	87	4·49	4·27
2	B	24	86	4·00	80	93	93	4·51	4·46
3	A	16	101	4·40	40	104	104	5·12	5·05
4	C	48	77	3·88	160	84	82	4·07	3·86
5	B	4	87	4·24	80	94	93	4·40	4·46
6	A	32	95	4·45	80	104	104	5·07	5·05
7	C	8	95	4·67	160	101	100	4·90	4·93
8	C	32	92	4·72	160	94	93	4·68	4·65
9	C	16	85	4·26	160	96	91	4·68	4·63
10	B	8	100	4·73	80	95	95	4·70	4·65
11	B	16	95	4·15	160	96	98	4·52	4·65
12	A	4	94	4·30	40	97	96	4·58	4·65
13	C	4	94	4·52	40	97	97	4·68	4·71
14	A	16	83	4·17	80	88	90	4·41	4·48
15	B	8	90	4·19	80	95	96	4·67	4·57
16	C	24	83	4·03	160	91	93	4·27	4·39
17	C	16	91	4·34	80	104	101	4·94	4·89
18	C	12	90	4·48	80	90	90	4·54	4·56
19	C	32	89	4·12	160	97	94	4·35	4·42
20	B	8	88	4·41	80	90	87	4·43	4·41
21	C	4	92	4·58	40	90	93	4·08	4·09
22	B	16	95	4·60	50	98	95	4·74	4·77

The statistical analysis was not carried out on these average figures, but on a consideration of all the available data for each patient. The vitamin B_{12} was given originally in a concentration of 20 µg. per ml., so that no patient ever received more than 8 ml. a month. This dose can now be given in 1·6 ml. For a description of columns A and B, see text.

TABLE II.—*Showing Results of Analysis of Variance of Data from Cases 1–22*

Source of Variation	Haemoglobin Estimations: Variance	Haemoglobin Estimations: Degrees of Freedom	Haemoglobin Estimations: Variance Ratio	Red-cell Counts: Variance	Red-cell Counts: Degrees of Freedom	Red-cell Counts: Variance Ratio
Between patients	458·7	21		1·03	21	
Between treatments within patients	121·4	22	2·23	0·1777	22	2·07
Within treatments	54·2	402		0·0856	275	
Total ..		445			318	

The difference between treatments for individual cases was tested against a standard error based on the "within treatments" variance. This is the best estimate of the standard error. Vitamin B_{12} gave significantly better results in five cases (Nos. 1, 14, 15, 16, and 17) for the haemoglobin, and for eleven cases (Nos. 1, 2, 3, 6, 9, 11, 12, 14, 15, 16, and 17) for the red-cell counts. Only one case showed while receiving vitamin B_{12} a decrease in both estimations, and this was not significant. Case 21 showed a significant decrease in the red-cell count only. In the remaining cases the number of blood estimations was smaller and the slight increase in the mean values while on vitamin B_{12} therapy was not significant at the 5% level of probability.

Many of the means in column B of Table I, which are calculated from the results obtained during approximately two years of vitamin B_{12} therapy, are lower than those in column A, which are calculated from the results obtained during the first eighteen months. Statistical analysis shows that for haemoglobin the aggregate effect is a significant decrease (at the 1% probability level) between the two sets of means. There is, however, no significant difference in the red-cell counts. Haemoglobin levels are of course influenced by factors other than the presence of an adequate amount of liver principle.

A study of the individual cases showed that the first few counts were often higher after the change from liver to vitamin B_{12} treatment, and these figures might have produced the significant increases found in the variance analysis. We therefore compared the results of treating ten patients with pernicious anaemia who received vitamin B_{12} from the start of their illness for periods ranging from six months to two years (Cases 33 to 42 in Table III) with a group of ten patients who had received liver extract for a similar period (Cases 23 to 32 in Table III). The average maintenance dose

TABLE III.—*Haemoglobin Concentration and Red-cell Counts in 10 Patients Maintained on Liver Extracts and on 10 Patients Maintained on Vitamin B_{12} in a Dose of 50 µg. a Fortnight or Occasionally 100 µg. a Month for Six Months to Two Years*

Case No.	Patients Treated with Liver Extract Only: Average Hb % (100%=14·8 g.)	Patients Treated with Liver Extract Only: Average R.B.C. (mill./c.mm.)	Case No.	Patients Treated with Vitamin B_{12} Only: Average Hb % (100%=14·8 g.)	Patients Treated with Vitamin B_{12} Only: Average R.B.C. (mill./c.mm.)
23	86	4·18	33	92	4·59
24	85	4·01	34	91	4·53
25	97	4·71	35	98	4·66
26	86	4·21	36	96	4·50
27	95	4·40	37	88	4·12
28	93	4·27	38	106	5·13
29	91	4·47	39	99	4·93
30	104	5·15	40	98	4·83
31	94	4·20	41	98	4·53
32	90	4·38	42	93	4·70
Grand mean	92	4·40		96	4·65

was 50 μg. a fortnight although some patients were given 100 μg. every month. The figures analysed were those obtained after complete clinical and haematological response. The result in each of these cases was satisfactory (Table III).

An analysis of variance again showed that vitamin B_{12} gave significantly better results than liver extracts. The difference which was significant at the 1% level of probability (Fisher and Yates, 1948) was obtained by testing the "between treatments" variance against the "residual error" variance in Table IV. Inspection of the figures showed no tendency to fall off with time, and the patients remained well on both treatments.

TABLE IV.—*Showing Results of Analysis of Variance of Data from Cases 23–42*

Source of Variation	Haemoglobin Estimations			Red-cell Counts		
	Variance	Degrees of Freedom	Variance Ratio	Variance	Degrees of Freedom	Variance Ratio
Between treatments	998·0	1	16·4	1·71	1	8·6
Between patients within treatments	225·5	8		0·588	8	
Residual error ..	60·9	39		0·198	102	
Total ..		158			104	

Other Haematological Observations

White-cell counts were estimated, and prothrombin levels were determined, using a slightly modified Quick one-stage method, in all the patients having maintenance treatment on vitamin B_{12} and in 17 patients receiving liver extracts. The leucocyte counts were all within the normal range. Two patients receiving vitamin B_{12} had prothrombin levels slightly below the average normal level but still within the normal range. Neither showed any clinical manifestation of prothrombin deficiency.

With one exception all the patients treated with vitamin B_{12} remained well *clinically*. No instances of sore tongue or of gastro-intestinal disturbance were seen. Symptoms or signs of neurological involvement did not appear. Patients said they felt well, and none wished to revert to liver therapy.

The following are some case histories of patients who were strikingly improved by the change from liver extract to vitamin B_{12}.

A man aged 32 was diagnosed by his own practitioner as a case of pernicious anaemia in February, 1948, and was treated with liver extract A in doses of 1 ml. weekly for seven months, followed by extract B in doses of 1 ml. weekly for four months, then by extract A at first in a dose of 2 ml. every 14 days and then every week. After a further nine months he still felt ill, and was referred to hospital for the first time. A blood count showed Hb 80% (11.4 g.%) and red cells 2,500,000 per c.mm. His bone marrow was megaloblastic. He was placed on 40 μg. of vitamin B_{12} every 14 days, and has since felt well and maintained a normal blood picture.

A woman aged 58 was a known case of pernicious anaemia who before we saw her had been treated with 2 ml. of liver extract C weekly for six months, followed by 2 ml. of extract B for a further eight months. At the end of this time her marrow was megaloblastic and her peripheral blood count showed Hb 50% (7.4 g.%) and red cells 2,020,000 per c.mm. She felt ill. On 40 μg. of vitamin B_{12} every three weeks the blood count has remained normal for the past 18 months and she has felt very well.

A woman aged 63 was treated with liver extracts from April, 1946, to December, 1950. On a dose of 4 ml. weekly her blood count was only Hb 85% (12.3 g.%), red cells 3,800,000 per c.mm. She has now received 40 μg. of vitamin B_{12} fortnightly for one year, and the haemoglobin has risen and remained above 90% and the red cells have increased to 4,500,000 per c.mm. She feels better.

Only one patient has had a relapse while on vitamin B_{12} therapy. She was a woman aged 59 who had received 4 ml. of a liver preparation weekly for 19 months. She had been given this high dose because she had shown evidence of subacute combined degeneration of the cord at her first visit. She remained well on 40 μg. of vitamin B_{12} a fortnight for four months, but when the interval between injections was extended to one month, although the dose was 100 μg., she complained of paraesthesiae and developed some ataxia. The blood count had fallen. Symptoms subsided rapidly and the blood count rose when 50 μg. of vitamin B_{12} was given weekly.

Discussion

It is generally agreed that injections of vitamin B_{12} will give a satisfactory haematological response and a clinical remission when injected into patients with pernicious anaemia in relapse. Several observers have, however, produced evidence suggesting that in long-term treatment liver extracts have advantages. Thus Meacham, Vignos, Heinle, Weisberger, and Epstein (1950) found that 13 out of 30 patients treated for between 5 and 14 months with vitamin B_{12} had a fall in red-cell count of over 500,000 per c.mm. They suggested that their results could be explained if liver extracts contained, in addition to vitamin B_{12}, other accessory factors necessary to the maintenance of normal haemopoiesis. They thought it more probable, however, that the dose which they were giving was inadequate. The preparations they used were concentrates assayed biologically, and thus did not necessarily contain the full stated content of pure crystalline vitamin B_{12}. Since the dose was also low, only 30 μg. a month, it is perhaps not surprising that full effects were not obtained. Similar results to which the same criticisms apply were reported by Beard, McIlvanie, and Nataro (1950).

At the Third International Congress of Haematology, held in Cambridge in August, 1950, many speakers voiced doubts about the capacity of vitamin B_{12} to replace liver extracts completely. Thus Goldsmith (1951) found a gradual fall in the erythrocyte count of two patients with pernicious anaemia on vitamin B_{12} therapy over a period of several months. Increasing the dose of vitamin B_{12} and decreasing the interval between injections did not influence the findings in either of these patients over the next two months. McSorley (1950) said that vitamin B_{12} therapy left the leucopenia unaffected in four cases. Beard (1950) transferred 37 cases from liver extract to vitamin B_{12} in a dose of 30 μg. per month with immediate improvement, but the blood count fell after 7–11 months, although the dose was raised to 100 μg. a month. Wilkinson (1950) reported glossitis and poor counts on 20–60 μg. weekly.

Other observers have reported satisfactory results on vitamin B_{12} treatment. Kinnear and Hunter (1950) placed a series of 20 cases, after initial treatment with liver extract, on 20 μg. of vitamin B_{12} every three weeks. In all but one case, which was complicated by haemorrhage, a satisfactory blood picture was maintained for six months. Mills and Hemsted (1951) substituted vitamin B_{12} for liver extract in the treatment of all their cases of pernicious anaemia: 37 cases received 20 μg., 49 received 40 μg., and 58 received 80 μg. of vitamin B_{12} each month by intramuscular injection for a period of one year. The higher the dose the higher was the red-cell count in general. In 65% of cases the level of the latter was distinctly higher than during liver maintenance therapy, 32% showed no significant difference, and only 3% were worse. Ungley (1951) found that a dose of 10 μg. of vitamin B_{12} every two weeks was effective in most of a group of 19 patients for periods up to three years. In the exceptions there were transient symptoms, such as sore tongue, which disappeared spontaneously or were abolished by increasing the dose. He rightly states that such low maintenance doses would be dangerous for patients not under close observation.

It has been shown that certain clinically unimportant abnormalities in the blood picture tend to persist on treatment with purified liver extracts or vitamin B_{12} but to be rectified by the use of crude liver extracts or proteolysed liver. These include macrocytosis associated with the presence of a foetal haemoglobin and an abnormal pro-

thrombin content of the blood (Owren, 1950, 1951; Larsen, 1951). Owren (1950) has postulated a "protein synthesis liver factor" which is itself haematologically inert but which is able to correct the above abnormalities. In our series of cases we could not demonstrate the presence of a low prothrombin content of the blood, using a slightly modified Quick one-stage technique, which was less sensitive, however, than the technique used by Owren (1949). Since many thousands of patients have now remained perfectly well for very many years on treatment with purified liver extracts alone we cannot feel that this protein synthesis factor has any practical significance in the treatment of pernicious anaemia.

Nine of our patients were selected at random. Of the eight patients on vitamin B_{12} therapy, six showed degrees of macrocytosis varying between 4.5% ± 3.2 (2 S.E.) and 22.5% ± 5.8 as judged by Price-Jones curves, while the single patient on purified liver extract treatment showed a macrocytosis of 27% ± 6.2.

In our cases, apart from the one case (No. 21) mentioned above, over a period of two years, vitamin B_{12} always maintained the red-cell count at the same or higher levels than liver extract had done in the same patients. Moreover, the result was achieved with a much smaller dose of vitamin B_{12} in terms of millilitres of injection. This is a point of some practical importance to a patient, since bulky injections are painful. We saw no example of glossitis or persistent leucopenia.

Mollin and Dacie (1950) found that to maintain a normoblastic bone marrow for 15 days it was necessary to give doses of the order of 30–40 μg. of vitamin B_{12} or of a liver extract shown by assay to contain this quantity of vitamin B_{12}. Half this quantity would give "average satisfactory" responses in the majority of patients, but the marrow was megaloblastic before the end of the 15-day period. On our dosage scheme we saw only the one case of clinical and haematological relapse which we have already described in detail, and this was clearly an instance of too infrequent dosage. In view of Mollin and Dacie's results, and on our own experience, we now advise a dose of 50 μg. of vitamin B_{12} given every fortnight, except that we give 100 μg. weekly in cases in which there are neurological complications.

We are aware that our series is relatively small and that studies on the effect of treatment with vitamin B_{12} carried out on much larger numbers of patients for longer periods will be reported from other centres. Comparisons with simple liver extracts may, however, prove to be more and more difficult if manufacturers fortify their products with added vitamin B_{12}; many are now assaying their extracts biologically and claiming a relatively high content in terms of vitamin B_{12} activity. Wide variations in potency and cost will probably remain.

We feel we can confidently recommend physicians and general practitioners to change their patients' treatment from liver extract to vitamin B_{12}, and this recommendation would have been the same if our patients' blood pictures had remained unaltered by the change to vitamin B_{12} instead of showing a slight overall improvement. We feel sure that on vitamin B_{12} treatment for at least two years a person with pernicious anaemia will remain clinically and haematologically as well as or better than he now is on liver therapy. He will gain because he will have a much smaller bulk of injection and he will be certain of receiving an effective dose. The community of which he is a member will save money, too; for the price of a minimum monthly effective dose of liver extract (4 ml.) is about five times that of a certainly effective dose of vitamin B_{12} (100 μg.). In our series (Table I), in which the average dose of liver extract was very high, the cost has been reduced to one-twentieth by changing to vitamin B_{12} injections. There seems, indeed, little justification for the continuance of a relatively expensive form of treatment unless better evidence than that now available can be brought forward to support it.

Summary

Sixty patients suffering from pernicious anaemia have been maintained in good health on injections of vitamin B_{12} (cyanocobalamin).

Of these, 22 had been previously treated with liver extracts for relatively long periods and were then given vitamin B_{12} for at least two years. Only one case showed a statistically significant decrease in the red-cell count; 11 cases had a significant increase. No case showed a significant decrease in haemoglobin concentration.

The first 10 of the patients who had been treated with vitamin B_{12} from the start of their illness showed significantly higher red-cell counts and haemoglobin concentrations when compared with 10 patients who received liver extract alone.

A few patients were strikingly better on vitamin B_{12} treatment; one relapsed because of too infrequent dosage.

No evidence was found of sore tongue, gastrointestinal disturbance, neurological involvement, or leucopenia. Macrocytosis may persist.

Vitamin B_{12} injections are small in bulk, constant in potency, relatively cheap, and do not lead to sensitization. A maintenance dose of at least 50 μg. a fortnight is recommended for all patients with pernicious anaemia without neurological involvement.

References

Beard, M. F. (1950). *Lancet*, **2**, 407.
—— McIlvanie, S. K., and Nataro, M. (1950). *Sth. med. J.*, **43**, 678.
Beckman, H. (1950). *Year Book of Drug Therapy*, p. 12. Year Book Publishers, Chicago.
Fisher, R. A., and Yates, F. (1948). *Statistical Tables for Biological, Agricultural and Medical Research*, 3rd ed. Oliver & Boyd, Edinburgh.
Girdwood, R. H., Carmichael, K. M., and Woolf, B. (1950). *British Medical Journal*, **2**, 1357.
Goldsmith, G. A. (1951). *Proceedings of the Third International Congress of the International Society of Hematology*, p. 11. Grune & Stratton, New York.
Kinnear, T., and Hunter, R. B. (1950). *Edinb. med. J.*, **57**, 65.
Larsen, G. (1951). *Proceedings of the Third International Congress of the International Society of Hematology* p. 25. Grune & Stratton, New York.
McSorley, J. G. A. (1950). *Lancet*, **2**, 407.
Meacham, G. C., Vignos, P. J., Heinle, R. W., Weisberger, A. S., and Epstein, M. (1950). *J. Lab. clin. Med.*, **35**, 713.
Mills, J., and Hemsted, E. H. (1951). *Lancet*, **1**, 237.
Mollin, D. L. (1950). Ibid., **1**, 1064.
—— and Dacie, J. V. (1950). *Proc. roy. Soc. Med.*, **43**, 541.
Owren, P. A. (1949). *Scand. J. clin. Lab. Invest.*, **1**, 81.
—— (1950). Ibid., **2**, 241.
—— (1951). *Proceedings of the Third International Congress of the International Society of Hematology*, p. 34. Grune & Stratton, New York.
Rickes, E. L., Brink, N. G., Koniuszy, F. R., Wood, T. R., and Folkers, K. (1948). *Science*, **107**, 396.
Smith, E. L., and Parker, L. F. J. (1948). *Biochem. J.*, **43**, Proc. viii.
Ungley, C. C. (1949). *British Medical Journal*, **2**, 1370.
—— (1951). *Nutr. Abstr. Rev.*, **21**, 1.
Wilkinson, J. F. (1950). *Lancet*, **2**, 407.

In the House of Commons last week Mr. Frederick Willey raised an interesting point when he asked the Minister of Food what is known about the consumption of rationed and otherwise controlled foods by the various social groups in this country. Major Lloyd George told him he thought the most accurate data available were those provided by the sample inquiries made under the National Food Survey for the quarter ended March 31. According to this all social groups took up their full rations except for bacon. Analysis of the consumption of individual foods showed that the highest social group took up less of their bacon ration than the lowest; the former bought 93% of the total entitlement, and the latter as much as 98%. In other words, the poor eat more bacon than the rich. In the case of eggs, however, the opposite happens. People in the lowest social group ate on the average three eggs each per week. Those in the highest, however, managed to eat three and three-quarter eggs. As for milk, the lowest group used just over four and a half pints each week, and the highest six.

A YEAR OF GENERAL PRACTICE: A STUDY IN MORBIDITY

BY

JOHN FRY, M.B., F.R.C.S.

During the past four years there has been a great deal of discussion concerning the work, status, and remuneration of general practitioners. Many loose statements have been made in connexion with general practice, without any accurate data to support them. This paper is an attempt to provide some information on general practice. Its scope and objects are : (1) to present a picture of the work of a general practitioner as recorded by facts and figures collected over a period of one year (1951) ; (2) to examine the causes of ill-health in the particular community under consideration ; (3) to stress the conditions which are most often encountered in general practice ; (4) to show that a so-called large practice can be managed easily, and I hope efficiently ; and (5) to indicate the large scope which exists for research in general practice.

Few reports on this subject have been found in the medical literature. The only similar one is by McGregor (1950), who reports on a year's work in his Scottish practice. Other papers which have a bearing on the subject have been published by Pemberton (1949) and Bradford Hill (1951).

The great importance of estimating the amount of ill-health in the nation has only recently been stressed. It is particularly necessary if plans for further improvements in social medicine are to be soundly based and if the National Health Service is to function efficiently. General practice records offer an easy and relatively reliable method for studying morbidity. The general practitioner is usually the first medical man to be consulted by a sick person. He treats most illnesses alone, and they never reach hospitals or other medical units. He is therefore in a good position to report on communal ill-health. It must be mentioned that according to the Social Survey (Stocks, 1949) report on national morbidity only 23% of all people who reported an injury or illness during a period in question consulted a doctor. Other sources of information on the extent of national morbidity are the National Morbidity Survey, National Insurance records, notification of prescribed infectious diseases, hospital records, the disabled persons register, and the certification of certain scheduled diseases for purposes of entitlement to special food allowances.

Type of Practice

It is necessary to give a short description of the practice from which this report emanates. The work of a general practice obviously varies according to its situation, the type of population, the practitioner in charge, and the diagnostic and therapeutic facilities which are available to him. The particular practice under review has been established for some 20 years, and has always been worked by a single practitioner. I have been in the practice for five years. It is situated on the south-east urban outskirts of London, in a borough with a population of 75,000. The area is closely populated by persons of the lower middle classes, whose occupations are chiefly in local industry or in clerical duties in London. The district is classified as one which is relatively over-doctored. The area of the practice covers some four square miles, but, even so, the yearly mileage involved is approximately 14,000 miles. The practice is almost entirely of N.H.S. type, with only a small proportion of private patients. The method of work is briefly as follows.

A typical day begins with a visiting round from 8.30 to 9.30 a.m., followed by a morning consulting session from 9.30 to 11.30. A further round of visits is from 11.30 a.m. to 1.30 p.m. The afternoons are occupied with hospital duties three times a week and in carrying out work which has not been completed on earlier rounds. A second consulting session is from 6 to 8 p.m. An average of 25 patients are seen in a single consulting session, the average time taken for each patient being five minutes. If there is not enough time in a consulting session to examine a patient a further appointment is made for him to be seen when mutually convenient.

It should be pointed out to those who are not familiar with general practice that the vast majority of consultations are not for any real organic diseases and do not necessarily require any thorough medical examination.

The number of daily visits averages about 10, the time taken for these being 10 to 15 minutes a visit. A part-time secretary is employed to help with the clerical duties.

There are admirable local diagnostic facilities, and I wish to express my sincere gratitude to the local hospital authorities for making these radiological and pathological facilities available to all the local practitioners. This area is well supplied with hospitals. There are four in the local hospital group, and the large London hospitals are within 30 minutes' travelling time. There are no hospital beds available where the practitioner can treat his own cases ; once they are admitted to hospital patients cease to be under his care.

The numbers of patients who have been referred for consultant opinion either in hospital or elsewhere and those who have been referred for local radiological or pathological investigations are shown in Table I. It will be seen that 460 patients have had investigations carried out at the local hospital without the cases having left my care. These have therefore been spared the need of being referred to a hospital out-patient department for their investigations, which, in my opinion, were necessary. Those who were eventually referred for consultant's opinion had in many cases already had appropriate investigations carried out.

TABLE I

Disposal	No.	Percentage of Practice
Referred for consultant's opinion ..	307	6·9
,, ,, radiological investigation	240	5·4
,, ,, pathological ,,	220	4·9

Certification.—A good deal has been heard concerning the abuse of certification. It is interesting to note that in this practice during 1951 the number of certificates issued for purposes of incapacity for work, food priorities, and other miscellaneous reasons was 2,018. This means that one consultation in seven necessitated a certificate of some form.

Record-keeping

In order that this investigation could be carried out, relatively simple methods of recording the results had to be employed. A first step is to define morbidity or ill-health. In this survey all persons who sought my medical advice were considered to be ill. The only exceptions were those who were examined for insurance or emigration purposes. This was a small number, amounting to only 75 during the year. The numbers at risk were easily ascertained from N.H.S. record cards and the number of private patients was known. In order that the investigation could be kept within limits of practical endeavour too much information was not sought. The principal facts to be investigated were to determine the common disease groups, their sex and age distribution, and the volume of work done during the year.

It was decided to classify cases under age and disease groups rather than according to specific ailments. Classification according to age was in five-year groups, from 5 to 85, and two separate groups consisting of infants under 1 and

young children from 1 to 4. Classification of disease was more difficult. The only practical method was to group the diseases under fairly large headings, and the following 21 groups were considered appropriate.

Self-explanatory were groups containing digestive, respiratory, cardiovascular, orthopaedic, genito-urinary, dental, rectal, eye, and gynaecological disorders. Other groups were those concerning accidents, varicose veins, vaccination and immunization, and patients seen in connexion with pregnancy and diseases of the central nervous system. Groups which require some explanation were upper respiratory infections, including "colds," sore throats, and the acute coughs, with no abnormal chest signs. The ear, nose, and throat group contained patients suffering from affections of these organs but not those mentioned in the previous group. The rheumatic group contained patients suffering from specific arthritis and that large ill-defined condition of "muscular rheumatism" or "fibrositis." Specific fevers were grouped together with those cases thought to be true influenza. Skin disorders consisted of the usual recognized conditions and also conditions of the subcutaneous tissues such as infected fingers, boils, and carbuncles.

The neuroses presented a difficult definitive group. It was easy to classify the severe psychopaths, but the majority in this group had mild anxiety states and depression. There was left a miscellaneous group which contained those cases which did not fit into any of these groups.

As each patient was seen his name, age, sex, and disease were noted and also whether he was given a certificate or was referred to hospital or for radiological or pathological investigations. This information was recorded in a notebook, thus:

Smith, G. M. 52. Resp. C. XR

This gives a record of the individual, his sex and age, that he was suffering from a respiratory disorder, for which he was referred for an *x*-ray examination, and that he was issued with a certificate. This type of information was transferred into a ledger at weekly intervals.

Results

1. Number of Patients

The practice is a growing one, and a mid-year figure was taken to establish its size. The distribution in age groups is shown in Table II. The sex ratio was 2,150 males to 2,306 females.

TABLE II.—*Numbers at Risk at Various Ages*

Age	0–4	5–9	10–19	20–29	30–39	40–49	50–59	60–69	70–79	80+
No.	319	334	454	665	785	775	548	369	169	38

2. Work Done

This was estimated by recording the total number of surgery attendances and visits completed over the year. 1951 was exceptional in having a relatively severe influenza epidemic in January and February. During this period 225 individual cases of influenza were seen, requiring some 750 attendances. In other respects it was an apparently "normal" year.

In 1951 surgery attendances numbered 11,846, and visits 2,758, a total of 14,604. This gives an average number of attendances per person per year of 3.28. It is interesting to compare these figures with those of the years 1950 and 1949, bearing in mind that the National Health Service began in July, 1948. In 1949 the total attendances were 12,838, with an average medical attendance figure of 3.7 per person. In 1950 the total attendances were 15,135, with an average medical attendance figure of 3.8 per person. In spite of an influenza epidemic and with a larger practice the actual amount of work per person has decreased.

These figures may be compared with others: Bradford Hill (1951) gives a figure of 5 attendances per person per year for 1938 for National Health Insurance patients; the British Medical Association (quoted by Bradford Hill) a figure of 5.13 for 1936. The Ministry of Health, at an inquiry in 1937, gave a figure of 3.66. McGregor's figure (1950) was 5, as was that derived by the Social Survey Unit.

Patients have, on the whole, been co-operative in easing one's burden by leaving requests for calls at the correct time—that is, before 10 a.m. However, even so, 110 night visits were paid during the year, between 8 p.m. and 7 a.m.

This volume of work done varied with sex, age, season, and day of the week.

Sex.—As in other reports, there was an obvious predominance of females, the ratio being approximately 5 : 4 (Table III).

TABLE III.—*Number of Attendances, Showing Sex Distribution*

Sex	Surgery Attendances	Visits	Total
Male	5,389	1,228	6,617
Female ..	6,457	1,530	7,987

Age.—Table IV shows the variation in incidence of ill-health in each age group as indicated by the average number of attendances per individual in each group. The healthiest age group was 10–19, and those requiring most medical attention were the over-70's.

TABLE IV.—*Number of Attendances Per Person During 1951 in Age Groups*

Age Group:	0–4	5–9	10–19	20–29	30–39	40–49	50–59	60–69	70–79	80+
No. attendances per person per year ..	3·7	3·3	2·4	2·8	2·8	2·8	3·7	4·1	7·0	7·7

Day of Week.—Monday was undoubtedly the busiest day for both visiting and surgery attendances. Friday, Tuesday, and Wednesday were next in order. It is remarkable how this uniformity was maintained throughout the different monthly groups. (It must be mentioned that there are no evening consulting sessions on Thursday or Saturday—on the latter day only since April.) These results are similar to those reported by Bradford Hill (1951). Table V shows the mean results obtained from keeping monthly (four-weekly) records during 1951.

TABLE V.—*Services Rendered on Each Day of the Week—Percentage Distribution*

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Surgery attendances ..	22·5	18·8	17·7	8·8	19·1	13·1	—
Visits	19·3	16·8	15·3	13·9	15·3	12·4	7·0

Season.—As might be expected, there was a seasonal variation in the volume of work. This is shown graphically in Fig. 1; the variations for the two preceding years are inserted for comparison.

3. Individual Attendance

Out of the 4,456 individuals at risk 3,373 had cause to consult me professionally during 1951. This means that three out of four (or 75%) of the community under consideration required medical attention. This is a surprisingly high proportion. 2,700 were seen on five or fewer occasions, but one patient was seen 61 times. McGregor (1950) found that "over 60%" of his practice were seen in a year.

According to the Social Survey only 23% of sick people (adults) actually consult a doctor in any one month under review. It is astounding to think of the amount of national ill-health if in fact this figure is correct. No record was kept of the frequency of attendance in relation to the various family groups, but the general impression is that in some families the medical attendanee quota is very much higher than in others.

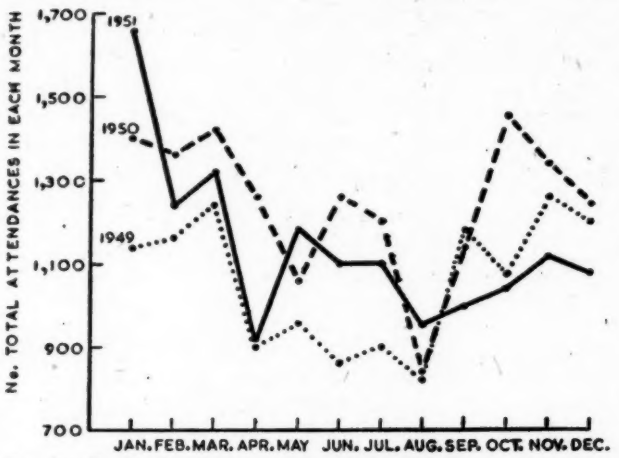

FIG. 1.—Graph showing seasonal variation in volume of work for years 1949–51.

4. Incidence of Disease Groups

The disease groups which were responsible for sickness in this general practice during 1951 can be arranged in four orders of frequency. (1) Groups which were responsible for most attendances and which each accounted for at least 7% —that is, over 1,000—of the total medical attendances during 1951 are shown in Table VI. (2) Groups next in order of frequency, each accounting for between 500 and 1,000

TABLE VI.—*Number of Medical Attendances, Certain Disease Groups, and Sex Ratio*

Disease Group	No. of Surgery Attendances	No. of Visits	Total Attendances	Ratio M.: F.
Upper respiratory infections ..	1,448	363	1,811	0·97: 1
Respiratory diseases	1,012	669	1,681	1·11: 1
Digestive diseases	1,213	223	1,436	1·11: 1
Neuroses ..	1,315	64	1,379	0·46: 1
Skin disorders ..	1,148	63	1,211	1·02: 1
Cardiovascular disorders	565	446	1,011	0·79: 1

attendances, were specific fevers (790 total attendances); ear, nose, and throat disorders (723); rheumatic group (667); and disorders of the central nervous system (508). (3) Disease groups which accounted for 300–500 total attendances per group were orthopaedic disorders (489); attendances for

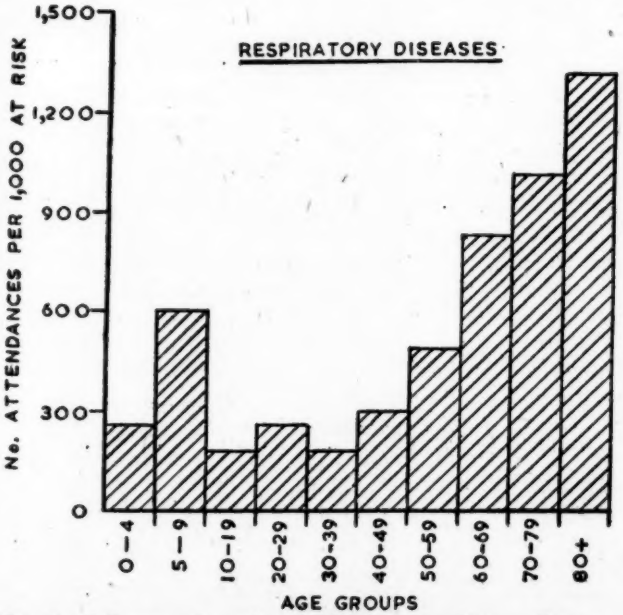

FIG. 2.—Influence of age on incidence of respiratory diseases.

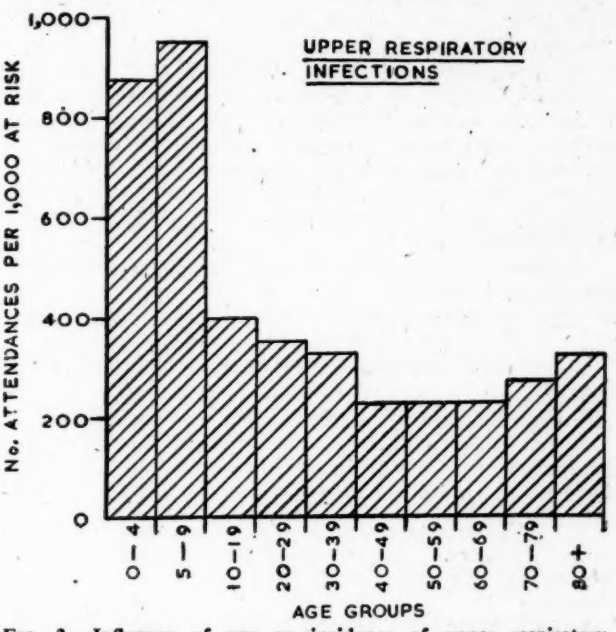

FIG. 3.—Influence of age on incidence of upper respiratory infections.

pregnancy (410); gynaecological diseases (383); eye ailments (364); accidents (357); and genito-urinary conditions (304). (4) The remaining groups showed a low rate of incidence (fewer than 300) with the exception of the miscellaneous group, which accounted for 585 attendances. Variations of the disease groups with age, sex, and season were observed.

Age.—The attendance rates per 1,000 persons were calculated for each disease in 10-year age groups. From these two distinct patterns appear: (1) *Where the incidence of disease group rises with age:* This is seen in the cardiovascular, central nervous system, digestive, rheumatic, genito-urinary, eye, varicose vein, and respiratory groups. A typical histogram of this group is that for respiratory disorders (Fig. 2). (2) *Where there is no increased incidence of the disease group with age:* Upper respiratory infections are particularly interesting in that the greatest frequency is in the 0–9 age group, and after this there is a fall (Fig. 3). Neuroses are most common between 30 and 60 (Fig. 4), and this is almost entirely accounted for by a rise in female incidence. Accidents and disorders of the skin and of the ear, nose, and throat show a more or less even frequency

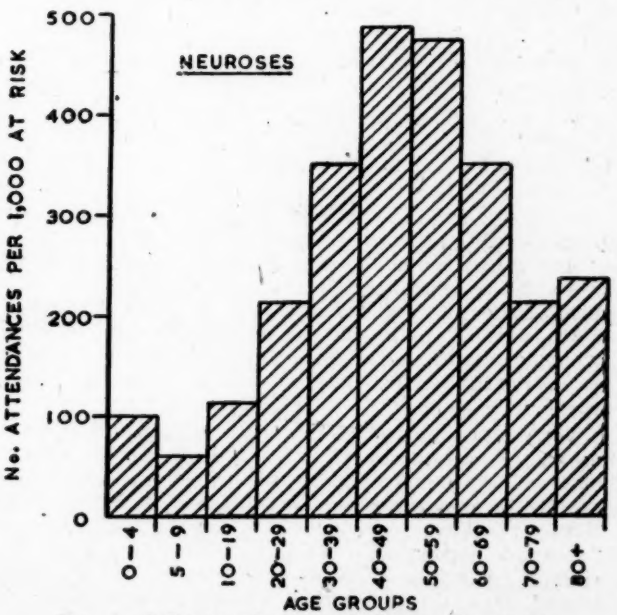

FIG. 4.—Influence of age on incidence of neuroses.

distribution at all ages. Orthopaedic disorders are most frequent in the active age groups, and fevers in children.

Sex is known to influence the incidence of certain diseases. Significant differences in distribution were noted in the neuroses and varicose vein and rheumatic disorders, in which females predominated. This was particularly noticeable in the neurotic group, in which there was a 2 : 1 difference. Males tended to predominate to a less extent in accidents and in orthopaedic, genito-urinary, respiratory, and digestive disorders (see Table VI).

Seasonal variations were significant only in respiratory diseases, in upper respiratory infections, and in the fever group, when a rise in the winter months was noted.

5. Survey of Incidence of Specific Organic Disease

Each patient's record card was examined and a note of any organic disease was made. For obvious practical reasons only certain common diseases were reviewed. The results of the frequency of the disease, the sex incidence, and the incidence per 1,000 are shown in Table VII. The penultimate column shows the results arrived at by the Social Survey. A close similarity between the figures will be noted. It can be seen that the most frequent serious organic diseases which were encountered in this general practice in 1951 were hypertension (and consequent cardiac failure), cardiac infarction, peptic ulcers, malignant disease, acute and chronic lung infections, tuberculosis, and "disk" lesions.

TABLE VII.—*Number of Diseases of Various Kinds, Their Sex Incidence, and Their Frequency per 1,000*

Disease	No. in Practice	Sex Incidence	No. per 1,000	No. per 1,000 Social Survey Results	Remarks
Hypertension ..	58	M. 16; F. 42	12·9	13·5	
Coronary artery disease	29	M. 22; F. 7	7·0	1·1	
Valvular disease of heart	18	M. 11; F. 7	4·0	2·6	
Peptic ulcers ..	55		12·3	15·3 (for London)	D.U. (M. 39; F. 6.); G.U. (M. 6; F. 4)
Neoplasms (malignant)	31	M. 19; F. 12	6·9	—	
Epilepsy	16	M. 8; F. 8	3·5	0·88	
Tuberculosis ..	40 (active 21)	M. 21; F. 19	8·8 (active 4·2)	(Active 4·5) (for London) 2·35	Pulmonary, 32; other sites, 8
Diabetes mellitus	10	M. 7; F. 3	2·3		New cases n year = 3
Organic neurological diseases ..	18	M. 8; F. 10	4·0	—	Parkinsonism, 4; disseminated sclerosis, 4
Severe "disk lesions"	30	M. 18; F. 12	6·7	4·8 (sciaticas)	
Pneumonias (all types)	66	M. 37; F. 29	12·5	—	
"Chronic chests"	44	M. 24; F. 20	10·0	31·0	
Rheumatoid and osteoarthritis ..	14	M. 5; F. 9	3·1	4·3	
Pernicious anaemia	9	M. 5; F. 4	2·0	1·4	New cases in year, 3

Discussion

An attempt has been made to illustrate the work of a general practitioner and to indicate the chief causes of minor ill-health. A general practitioner deals predominantly with minor causes of ill-health and with those major diseases which do not require admission to hospital. Only records from general practice or some form of national morbidity survey can uncover the extent and form of the vast amount of minor ill-health in the community.

The practice from which this report comes is an ordinary urban practice run by an ordinary practitioner. In this practice the amount of work as recorded by the average number of attendances per person per year has remained relatively constant over the past three years, and that average figure is 3.5 per person. The amount of work could, in my opinion, be cut down in three directions: (1) By using trained medical auxiliaries to perform tasks such as injections and minor routine procedure; (2) by educating the public on health and disease and to control certain unnecessary demands made on practitioners; and (3) by cutting down the need for certification.

The most frequent causes of ill-health in this practice during 1951 have been respiratory and upper respiratory tract infections, digestive and cardiovascular disorders, and, surprisingly, skin and neurotic ailments. Sir George Newman (1933) found that the most common causes of incapacity were respiratory infections, "influenza," digestive and rheumatic affections, and accidents. The Social Survey found that cardiovascular, respiratory, digestive, rheumatic, and skin disorders, upper respiratory tract infections, and neuroses were the common causes. McGregor's common groups were upper respiratory, digestive, and skin diseases. When the extent of serious organic disease is examined we find that the commonest diseases are cardiovascular, respiratory, and digestive. This knowledge should be reflected in stressing to medical students the frequency of these conditions.

General practice, as other things in life, is what you make it. If one is keen an enormous amount of interest and pleasure is to be derived from it, and there exists great scope for research in such fields as acute pulmonary and other infections and minor gastro-intestinal disorders, as well as in the social sphere and in studying the natural history of certain common diseases. I am fortunate in practising in an area where excellent facilities are available for carrying out direct radiological and pathological investigations; this adds greatly to the interest of the work. It would be even better if a few beds were available for general practitioners to treat their own cases in hospital.

Summary

A report is presented of the work of a general practitioner in a so-called large practice.

Methods of work and record-keeping are described.

An estimate of the incidence of morbidity in the community in question is attempted.

Results show that the average number of medical attendances per person for 1951 was 3.28.

Variation of the volume of work with sex, age, and seasons are noted. The healthiest age group was 10–19 and the incidence of sickness was greatest in the over 70's. Females predominated in the ratio of 5 : 4. There was the expected seasonal variation. Monday and Friday were the busiest days.

It is revealing to find that three out of every four patients at risk were seen during the year.

Disease groups which caused most ill-health were upper respiratory infections, digestive disorders, cardiovascular, respiratory, and skin diseases, and the neuroses.

Variations in disease groups with age and sex are described. Females predominate in neuroses and rheumatic disorders and males to a less degree in respiratory, digestive, and genito-urinary disorders.

A survey of the incidence of serious organic disease in the practice shows that the most common clinical conditions are hypertension, cardiac ischaemia, peptic ulcers, and respiratory infections.

Scope for clinical research in general practice is noted and the benefits from using the local radiological and pathological services are acknowledged.

It is a pleasure to acknowledge the help received from Mr. Clive S. Sabel in keeping records up to date, etc.

REFERENCES

Hill, A. Bradford (1951). *J. roy. statis. Soc.*, **114**, 1.
McGregor, R. M. (1950). *Edinb. med. J.*, **57**, 433.
Newman, G. (1933). Annual Report of Chief Medical Officer, Ministry of Health. London.
Pemberton, J. (1949). *British Medical Journal*, **1**, 306.
Stocks, Percy (1949). Sickness in the Population of England and Wales in 1944-7. Studies on Medical and Population Subjects. No. 2. General Register Office, London.

SENSITIVITY TO FIVE ANTIBIOTICS OF STRAINS OF STAPH. PYOGENES ISOLATED FROM OUT-PATIENTS

BY

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Few factors limit the usefulness of an established antibiotic so much as the development of resistance to it by bacteria originally sensitive. For penicillin this has happened with *Staphylococcus pyogenes*, and recent reports suggest that more than half the strains of this organism isolated from patients in hospital wards are likely to be resistant. This proportion, while undoubtedly reflecting a real increase in penicillin-resistant strains, also represents the results of cross-infection while in hospital, and so give little indication of the incidence of resistance amongst the general population. For this latter figure, strains recovered from hospital out-patients provide a fairer sample, and this paper records the sensitivity of 200 such strains of *Staph. pyogenes* to penicillin, and to streptomycin, aureomycin, chloramphenicol, and terramycin.

Sources of Staphylococci.—Swabs were taken from patients with staphylococcal infections of the skin and subcutaneous tissues who were attending the casualty department between January and April, 1952. Whenever possible swabs were taken at the first attendance or when a lesion was opened. Swabs taken from patients attending other out-patient departments such as the skin, or ear, nose, and throat department were not included in this series, but no attempt was made to exclude patients who had received antibiotics in the past.

Methods of Isolation and of Testing Sensitivity

All the swabs were sown direct on to horse-blood–agar plates from which two cups had been cut with a cork-borer. After inoculation the cups were filled with penicillin, 10 units per ml., and streptomycin, 100 μg. per ml. respectively. Staphylococci which coagulated plasma in a tube were described as *Staph. pyogenes*; those which were inhibited by the antibiotics to approximately the same extent as the Oxford H staphylococcus were regarded as sensitive. Penicillinase production was noted from the primary plate by the method of Waterworth (1948). Staphylococci were stored on agar slopes until tube dilution-sensitivity tests were carried out.

For these tests stock solutions of the calcium salt of crystalline penicillin G, streptomycin calcium chloride complex, chloramphenicol, and crystalline terramycin hydrochloride were prepared in sterile distilled water and stored at 4° C. The following concentrations were used: penicillin, 1,000 units per ml.; streptomycin, 10,000 μg. per ml.; chloramphenicol and terramycin, 1,000 μg. per ml. The solutions of penicillin, streptomycin, and chloramphenicol were replaced monthly, and the terramycin solution weekly. A solution of aureomycin hydrochloride, 1,000 μg. per ml., was prepared immediately before use.

For testing, series of twofold dilutions of each of the five antibiotics in 0.5 ml. of meat extract broth were prepared. For the inoculum a 24-hour meat extract broth culture of each staphylococcus was diluted 1 in 100 in broth and 0.5 ml. was added to each tube. All tubes were incubated at 37° C. for 18 hours, and the end-point was determined by inspection as the lowest concentration of antibiotic preventing visible growth.

Penicillin-sensitive strains were not titrated below a concentration of 0.25 unit per ml., or resistant ones above 128 units per ml.

Results

Table I shows the sensitivity of the 200 strains tested to penicillin. Of these, 168 strains were inhibited by 0.25 unit per ml., and had been judged to be sensitive to penicillin when isolated. The remaining 32 strains had been thought on isolation to be resistant, and had produced penicillinase.

TABLE I.—*Sensitivity to Penicillin of 200 Strains of Staph. pyogenes*

Minimum Inhibitory Concentration Units per ml.	No. of Strains
>128	6
128	2
64	3
32	7
16	6
8	2
4	4
2	2
1	0
0·5	0
0·25	168

Total No. of resistant strains, 32 (16%)

None of the staphylococci tested appeared markedly resistant to streptomycin, aureomycin, chloramphenicol, or terramycin. Their sensitivity to these antibiotics is shown in Table II.

TABLE II.—*Sensitivity of 200 Strains of Staph. pyogenes to Streptomycin, Aureomycin, Chloramphenicol, and Terramycin*

Minimum Inhibitory Concentration (μg. per ml.)	Streptomycin No. of Strains	Aureomycin No. of Strains	Chloramphenicol No. of Strains	Terramycin No. of Strains
64	0	0	0	0
32	23	0	10	0
16	125	0	150	0
8	47	0	36	0
4	5	0	4	5
2	0	8	0	87
1	0	59	0	104
0·5	0	108	0	4
0·25	0	25	0	0
0·125	0	0	0	0

There were no resistant strains.

Discussion

In testing the sensitivity of organisms to antibiotics the size of the inoculum used in each test may considerably affect the result. In this investigation the inoculum used was large, and the minimum inhibitory concentrations were higher than those which might be obtained by a method using a smaller inoculum. A large inoculum was used in the belief that it may more nearly represent the conditions in which the antibiotic is required to act in the body (Spink, 1951).

Penicillin.—Of the strains tested 16% were resistant to penicillin, as compared with 6.5% of staphylococci collected from similar patients in the same department three years before (Griffiths, Jones, Shooter, and Heady, 1949).

Streptomycin.—Staphylococci are known to become resistant to this drug, and numerous workers have reported resistant strains from hospital in-patients. The prevalence of such resistant strains among out-patients presumably depends on the freedom with which streptomycin is used, and our finding of no highly resistant strains is similar to that of Rountree, Barbour, and Thomson (1951), and of Barber and Whitehead (1949). There are few indications for the use of streptomycin in staphylococcal infections, and it was included as a matter of theoretical interest.

Aureomycin, Chloramphenicol, and Terramycin.—Naturally occurring strains of staphylococci resistant to these

drugs must be rare, and no such strains were found. This was supported by previous unpublished work by one of us (R. A. S.) in which an examination of 501 strains of *Staph. pyogenes* collected prior to 1950 failed also to show any strains resistant to aureomycin. Reports in the American literature suggest that resistant strains are becoming common among hospital patients in the United States. We have isolated strains resistant to aureomycin and strains resistant to chloramphenicol from patients in hospital. It is presumably only a matter of time before these organisms appear amongst the general population.

In view of the recent suggestion (Banks, 1952) that chloramphenicol is the drug of choice for treating penicillin-resistant staphylococcal infections, it is of some interest that the usual minimum inhibitory concentration of this drug for the organism in our series of strains was 32 times greater than that of aureomycin and 16 times that of terramycin.

Summary

Two hundred strains of *Staph. pyogenes* isolated from out-patients with staphylococcal infections of the skin and subcutaneous tissues have been tested for their sensitivity to penicillin, streptomycin, aureomycin, chloramphenicol, and terramycin.

Of the strains tested 16% were resistant to penicillin. No strains markedly resistant to the other antibiotics were found.

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REFERENCES

Banks, H. S. (1952). *Lancet*, 1, 560.
Barber, M., and Whitehead, J. E. M. (1949). *British Medical Journal*, 2, 565.
Griffiths, E., Jones, P. F., Shooter, R. A., and Heady, J. A. (1949). Ibid., 2, 958.
Rountree, P. M., Barbour, R. G. H., and Thomson, E. F. (1951). *Lancet*, 1, 435.
Spink, W. W. (1951). *J. Lab. clin. Med.*, 37, 278.
Waterworth, P. M. (1948). *Ann. Inst. Pasteur*, 75, 94.

THE ADOLESCENT FEEBLE-MINDED IN LAW AND PRACTICE

BY

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While there is general agreement that revision of the mental deficiency code is overdue, opinions differ on whether its future scope should be enlarged or be restricted among the subnormal. It is hoped that this account of a specialized practice will be conducive to a reorientation of views on the needs and prognoses of high-grade aments, encourage the allocation of suitable facilities for them, and indicate how both law and practice might better serve their interests and those of society.

Of the 1% of the population liable in certain circumstances to certification as mentally defective, about a fourth are so subnormal that they are a handicap, if not an intolerable burden, to the afflicted families. It is relevant, however, that the incidence of severe defect is equal throughout society and that its victims tend to assume, in both medical practice and popular belief, an importance out of all proportion to their social significance. On the other hand, the implications of feeble-mindedness tend to be underrated, although high-grade aments constitute a formidable social problem. They comprise three-fourths of the potentially certifiable, and their incidence is greatest in the "submerged tenth"; but, unlike idiots and imbeciles, the majority become useful citizens if they are properly trained; neglected, they fail to realize their mental and social potentials, and many remain in the "social problem group" and contribute to its degradation.

Until the Mental Deficiency Act, 1913, became effective feeble-minded adults had no legal recognition and educational provision for feeble-minded children was merely permissive. The Mental Deficiency Act, however, imposed statutory duties on local authorities to "ascertain" the mentally defective "subjects to be dealt with" and to provide for their care and control. Unfortunately, however, the ascertainment of defectives remains quite inadequate, and even to-day only 50,000 beds (mostly taken by low-grade cases) are provided in England and Wales for aments of all classes and types.

The Manor Hospital

The Manor Hospital practice originated in the L.C.C.'s decision to develop its hospital services with regard for the very different needs of high-grade, as distinct from low-grade, aments and the suitability of its institutions for the concentration of facilities appropriate for one or other type of case. Thus in 1922 the Manor became a training colony for aments (mostly of high grade), but since the State assumed control in 1948 low-grade aments have been admitted in increasing numbers.

Among 1,470 cases on the books females rather outnumber males; 10% are children and 40% are incapable of socially useful improvement because of the severity of their disabilities. Training facilities include a school where young people between 10 and 20 years of age acquire, among other things, the rudiments of the three Rs; older inmates learn a variety of crafts and domestic arts in other departments; speech and occupational therapists cater for appropriate cases; Scout and Guide activities form part of the training regimen, and welfare officers place and supervise patients in wage-earning employment in the Epsom district. The general care of patients is vested in the medical and nursing staff, and psychologists function in an advisory capacity. Thus The Manor, although a hospital, has much in common with a large co-educational boarding school.

Some of the results achieved are shown in the table.

Unfavourable home circumstances are conspicuous in the case histories of high-grade patients under care at The Manor. Typical records include reference to some combination of parental cruelty, desertion, neglect, domestic discord, remarriage, sexual irregularities, and crime. "Social

	1951	1950	1949	1948	1947
On the books	1,473	1,471	1,451	1,437	1,390
On "daily service" ..	175	216	226	211	164
Advanced to licence ..	19	22	29	18	27
Failed "to make good" ..	38	69	49	52	26
On licence, both "local" and "distant"	218	216	223	236	270
Recommended discharges	29	29	20	35	30
Failed "to make good" ..	29	25	30	23	69

"Daily service" cases reside in hospital and go out to work in the Epsom district; they earn £2–£4 weekly, some a trifle less, and others much more. Those chosen for "local" licence reside with their employers or in lodgings, and are selected for this form of community trial either because they happen to be friendless or because their home circumstances are deemed unlikely to be propitious to their social habilitation; "distant" licence cases are placed in the care of parents, relatives, or employers further afield. Almost all licensed cases are fully self-supporting and many earn standard wages, which in some instances amount to £7–£8 weekly. "Teen-agers" rarely succeed unless their home conditions are exceptionally favourable, and, as a rule, patients on community trial need repeated tests, over a period of years, before they achieve tolerable social competence. Indeed, final discharge is rarely recommended until full adult status is attained.

parasitism," slum conditions, and large families figure prominently, and various mental disabilities are commonly attributed to members of the family group.

The Medico-legal Concept of Mental Defectiveness

Four classes of mental defectives were described in the Mental Deficiency Act, 1913, but mental defectiveness itself remained undefined until the Act of 1927 declared it to be "*a condition of arrested or incomplete development of mind existing before the age of 18 years, whether arising from inherent causes or induced by disease or injury.*" Unfortunately the new definition did nothing to end the traditional confusion of "intellect" with "mind"—that is, the part with the whole—and thus some still postulate a low I.Q. rating as a diagnostic prerequisite. The psychiatric validity of this procedure is not in question, but it is certainly inconsistent with the law as it stands. Moreover, it is indisputable that the feeble-minded, under present-day conditions, owe their social inadequacy more frequently to defects of character and temperament than to intellectual inferiority. The specific mention of aetiology in the definition of mental defectiveness created new difficulties because environmental factors (such as psychological traumata) cannot be subsumed logically under the headings "inherent causes," "disease," and "injury," although unfavourable conditions of nurture may certainly contribute to, and sometimes even cause, temporary or permanent arrest of mental development. Hence, on occasion it is necessary to assume that primary (inherent, endogenous) defect is a residual condition after the exclusion of cases attributable to "disease" and "injury" and so, with questionable logic, satisfy protocol.

Like its predecessor, the amending Act also classifies aments in terms of the degree and nature of their defectiveness. The value of this classification is debatable and, so far as moral defectives are concerned, unnecessary because they are *ipso facto* feeble-minded.

Clinical and Administrative Considerations

Bredmose (1946) holds that puberty is very protracted in the feeble-minded, and he advocates institutional care for them until their mental maturation is complete. He adds that many so dealt with succeed after discharge and that some advance, in terms of test-intelligence, into the "backward group". Clarke and Clarke (1952) report that some feeble-minded patients at this hospital have shown relatively large I.Q. increments at ages when mental growth is generally assumed to have ceased. Research is now in progress to elucidate the nature of this phenomenon and to determine the frequency of its occurrence.

Clinical observation suggests that the tardy blossoming of adolescent feeble-minded subjects as seen at this hospital is associated with their removal from unfavourable environmental conditions and the provision of training for them in new surroundings. Of course they cannot describe their childhood reactions to psychological traumata, but it seems probable that, in some instances, regressive or schizoid mechanisms contributed to their relatively poor test performances as well as to their social incompetence. Grossly subcultural nurture may have caused the retardation of others—it is significant that the I.Q.s of the few morons admitted from "average" homes have remained relatively unchanged during the years of adolescence.

Statistics indicate that maximum cognitive ability is achieved commonly about the fifteenth year—that is, about the age of puberty and school-leaving—but the flattening of the curve of normal mental growth which then occurs is merely a phenomenon of the mean, whereas the existence of variability about the upper level of the mean curve tends, as a rule, tacitly to be ignored; hence in some cases peak ability may not be attained until comparatively late in adolescence. Thus a variety of factors seem to be involved in the late maturation of many feeble-minded adolescents, and the fact that their test scores are often misleading cannot be attributed to any single causal agency. Nevertheless, appropriate tests, applied in favourable test situations to subjects who have been able to acquire relevant informational experience, provide assessments of intellectual capacity and emotional attitudes remarkable for their accuracy and long-enduring validity.

The adolescence of the certified feeble-minded tends to be stormy, largely because the pace of physical growth is more rapid than that of mental maturation; moreover, unstable patients only too often find allies in subcultural parents against the sanctions of hospital care. Few aments from the social problem group are practised in self discipline and many are prone to relieve pent-up rage and frustration by short-circuit reactions.

Parole and tolerance of the friendly association of the sexes are elements of the training regimen, but the one occasionally leads to the abuse of the other; thus clandestine affairs occur and culminate sometimes in absconding, pregnancy, and, not infrequently, marriage. Both partners may be under care, but, more often, a female on licence and a non-certified but mentally or socially underprivileged male become intimate. The children from such alliances are unfortunate in both genetic endowment and prospects of nurture, and successive generations tend to be involved in the vicious circle of familial defect. The exposure of subnormals to temptation while denying them recourse to sterilization is one of the anomalies of mental deficiency practice; the mass sterilization of defectives would be both barbarous and futile, but opportune sterilization would undoubtedly assist many to survive socially and enhance the prospects of some under care to secure licence and discharge.

Male aments are the more prone to sexual crime—homosexuality, exhibitionism, and indecent assaults on children being the most common offences. For non-psychotic and non-epileptic adult offenders the social prognosis is so bad that segregation seems to be the only effective deterrent, but it is possible that the implantation of oestrogens might curb the libido of some sufficiently to justify the grant of short terms of licence.

Discussion

The Report of the Ministry of Health for 1951 states that no more than 50,000 beds are available in mental deficiency institutions, and the Report of the Ministry of Education for 1951 admits that, despite the ascertainment of the educationally subnormal (E.S.N.) being woefully incomplete, 28,000 E.S.N. children are competitors for 15,000 E.S.N. school places. With such inadequate provision for the subnormal the desirability of ensuring the most advantageous use of existing facilities is manifest; this cannot be achieved unless the ascertainment of subnormals is thorough and all candidates for residential care are investigated with due regard for their potentialities and needs, the circumstances of their nurture, and the best interests of the community. Obviously, life-long hospital care may be mandatory for many idiots and imbeciles, but it is relevant that for every low-grade ament admitted two, three, or more morons are deprived of the five or ten years of training upon which their successful social habilitation may depend.

Protocol caters for E.S.N. and feeble-minded children separately, but, in effect, applies standards of social competence (rather than of ability to learn the rudiments of the three Rs) in differentiating between them; thus ill-nurtured children who present evidence of subnormality are at a grave disadvantage when they compete for the inadequate E.S.N. facilities available. Moreover, if mentally underprivileged children are compelled by force of circumstance to remain exposed to adverse environmental conditions both "ineducability" and antisocial behaviour are not unlikely sequels. Paradoxically, however, really outrageous conduct may determine official action under mental deficiency law and secure the removal of subnormal victims of circumstance to an institution which happens to be suitably equipped, and thus lost ground may be made up tardily.

Of course institutional care is not a panacea for mental subnormality: the most admirable synthetic substitutes for

family life are not, as a rule, more favourable to the mental growth of young children than inferior, or sometimes even degraded, conditions of nurture; but the worse the home and the older the child the less cogent this generalization. Hence, when capacity for abstract thought appears at the mental age of about 7 years the interests of subnormal children and society need evaluation with regard to the probable effects of further exposure to bad upbringing.

Unfortunately the current demand for greater allocation of beds for low-grade defectives has led to the presence of an increasing proportion of hopeless aments among those with good prognoses. The resultant agglomeration of classes and types offends the sensibilities of even the least percipient newcomers to institutional practice; but many tend in time to grow indifferent to its social and psychological implications. Moreover, herding high- and low-grade cases in the same institution and under the same protocol intensifies antagonism to the mental deficiency code. Obviously, the mildly subnormal should not associate with the grossly afflicted and grotesque. Impressionable adolescents resent keenly their implicit identification with idiots and imbeciles, and parents protest, often with impeccable logic, that their children differ manifestly from low-grade cases and are indeed no more "mental" than they are themselves.

The sanctions of hospital care, including the (seemingly) arbitrary detention of potential wage-earners for indefinite periods and the application to subnormals of standards largely disregarded by their subcultural associates, contribute to the unpopularity of mental deficiency practice. Indeed, it is only when criminal charges may be preferred, or grave domestic crises occur, that certification and removal to institutional care are accepted with a tolerable, if ephemeral, show of resignation.

Although about 30% of the feeble-minded in hospital have been admitted direct from the courts, or indirectly via various corrective establishments, magistrates are, on the whole, singularly reluctant to deal with subnormal offenders as such. Lewis (1948) remarked that magistrates and juries tend to have their own criteria of mental defect and rarely recognize an adult as defective if his mental age exceeds 9 years; hence the paradox of indications of a high incidence of subnormality among prisoners and the insignificant proportion of them dealt with accordingly.

Conclusions

Problems presented by the subnormal in times of national emergency—the post-war crime wave, predictions of a declining national intelligence, and reports of "sensational" cases—have all focused attention on the social implications of high-grade defect. At the same time social attitudes have become more tolerant, full employment is (almost) a fact, the Disabled Persons' Register is open to the subnormal, and, in general, their material prospects have improved vastly. Despite, however, the advent of the Welfare State, the numerous feeble-minded progeny of the social problem group still need training and control in their own interest and that of others; but, while the parents of low-grade aments (being themselves "normal" people) press for school and hospital facilities, the subnormal and subcultural parents of the feeble-minded rarely do so. Thus lack of suitable training facilities, misinterpretation of the law, underestimation of the needs and potentialities of the juvenile and adolescent feeble-minded, inexcusable reluctance to face problems implicit in the exposure of the mentally underprivileged to adverse conditions, and failure to break the vicious circle of cause and effect in which they are involved—all these things, together with policies of *laissez-faire* in face of the overpublicized antagonism of uninformed opinion, have conspired against the best interests of the feeble-minded and those of society itself.

The importance of "nurture" rather than "nature" has been emphasized in this paper, because among the subcultural nurture is so often decisive in determining the existence of high-grade defect, social incompetence, and the need for official action. Hence for purposes of diagnosis and prognosis it is futile to consider the moron apart from his environment, past, present, and future. In brief, the chief function of mental deficiency practice (apart from the humane custodial care of low-grade cases) is to rescue impressionable young morons from adverse environmental conditions and to control their behaviour while they are being trained to realize their mental and social potentialities. Thus, when their characters have stabilized and they have achieved tolerable social competence at the close of their protracted psychological adolescence, it may prove possible to return them, not to environmental situations which proved disastrous for them, but to social conditions in the community likely to afford them fair prospects of fending for themselves and remaining useful citizens.

Recommendations

It is hoped that separate legislative provision will be made for high-grade aments—that is, low-grade normals—including certain psychopaths who are certifiable as feeble-minded, and that the application of the existing Acts will be restricted to low-grade aments without prospects of socially useful improvement. These measures would entail: (*a*) the reservation of some existing institutions already equipped with the requisite training and educational facilities; (*b*) priority of admission for (i) the adolescent feeble-minded who are over school-leaving age and are "subject to be dealt with" as prescribed in the existing Acts, and for (ii) those of the juvenile feeble-minded who are excluded from school or for whom provision under the educational code exists in theory rather than actuality; (*c*) the transfer of failures to "simpler" institutions so that special facilities might be used most economically; and (*d*) the effective segregation of the vicious and depraved.

The question of cost is particularly relevant in times of financial stringency, and its answer is indicated by the fact that The Manor weekly capitation rate for the year 1951 was less than 65s. and was but a small fraction of reported equivalent rates for remand homes, approved schools, and H.M. prisons.

In any event, and certainly if high- and low-grade defectives are to remain subject to the same protocol, the following changes are thought to be necessary: (1) the exclusion of references to aetiology from the definition of mental defectiveness; (2) an unequivocal statement that the function of hospital care is to relieve, if it cannot remove, the social incompetence of the feeble-minded through the media of appropriate training and education; (3) the removal of the category of "moral defectives"; and (4) amendment of the definition of imbeciles to indicate that such persons are deemed to be permanently incapable of learning to lead an independent existence in the community.

Separate care and training for high- and low-grade cases are regarded as essential, and, in the sphere of administration, the case for the unification of responsibility for the ascertainment, care, training, and control of mental defectives is regarded as as cogent to-day as when it was recommended by the Mental Deficiency Committee (1929).

I am indebted to my colleagues Drs. A. D. B. and A. M. Clarke both for their advice and for allowing me to refer to the interim results of their experimental work at The Manor Hospital.

References

Bredmose, G. V. (1946). *Acta psychiat. neurol., Kbh.*, **21**, 131.
Clarke, A. D. B., and Clarke, A. M. (1952). *Amer. J. ment. Defic.* In press.
Lewis, E. O. (1948). *J. ment. Sci.*, **94**, 262.
Report of the Mental Deficiency Committee (1929). H.M.S.O., London.
Report of the Ministry of Education, 1951. H.M.S.O., London.
Report of the Ministry of Health, 1951. H.M.S.O., London.

MECONIUM PERITONITIS DUE TO A HOLE IN THE FOETAL INTESTINAL WALL AND WITHOUT OBSTRUCTION

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The presence of meconium in the foetal peritoneal cavity has long been recognized as a cause of intense chemical peritonitis. The visceral peritoneum becomes thickened to form a membrane encasing the intestines; in it and in the thickened parietal peritoneum calcium is deposited, recognized radiologically (Neuhauser, 1944) and histologically (Falkenheim and Askanazy, 1892). In some cases there is a plastic peritonitis, in others gross ascites. Such changes are not infective, but infection is added when the normal intestinal bacteria appear on the third or fourth day of life. There is a mystery about the mechanism by which the meconium reaches the peritoneal cavity. Rupture of the intestinal wall does occur in both neonate and foetus in association with obstruction. Thelander (1939) has collected many reports of perforations at all levels of the gastro-intestinal tract. At the end of the proximal segment, at the lowest part of the normally functioning gut, there may be dilatation with or without muscular hypertrophy, and this whether the cause of the obstruction be atresia, stenosis, bands or aberrant arteries, or Meckel's diverticulum, malrotation with kinking of the gut, inspissated meconium, or paralysis of Hirschsprung type (functional obstruction). Sooner or later, without relief of the obstruction this segment perforates. A neonatal perforation, occurring after the arrival of intestinal bacteria, causes bacterial peritonitis and pneumoperitoneum with signs of severe shock leading to death of the baby.

Foetal perforation causing meconium peritonitis can be understood if it is accepted that the foetus swallows liquor amnii and the foetal intestinal wall moves in peristaltic waves. The statement made in 1915 by Rudnew (quoted by Low *et al.*, 1949), who collected 40 cases, is that in only half of them was there evidence of obstruction and, whether this proportion is accurate or not, a hole may be found without any obstruction. But why should there be a hole in the wall of what is apparently a normally formed and normally acting intestine? The mystery is further deepened by two more observations: cases of meconium peritonitis have been reported in newborn babies in whom the subsequent post mortem examination has failed to show any hole through which meconium could have escaped (Skiles, 1928); and in some cases, with a hole but without evidence of obstruction by inspissated meconium, pancreatic fibrosis is proved or suspected, as in Case 2 below. A full explanation to account for all these observations is still lacking. It is possible that a foetus with meconium ileus may by vigorous peristalsis rupture the gut and relieve itself by passing the meconium into the peritoneal cavity, and that the perforation may even heal in some cases before birth.

All cases of meconium peritonitis should be explored at the earliest convenient moment, after proper preparation of the baby, by corrective treatment of the fluid balance, vitamin-K injection, and, in the presence of gross ascites, slow abdominal decompression. The hole must be carefully sought and repaired. The surgeon must not relax because he knows that a hole is not always present. Congenital anomalies of the gut must be suitably corrected. Pancreatic efficiency must be tested by examination of stools and duodenal juice. There seems good reason to hope that with such an approach the majority of these babies will survive.

Diagnosis

The first problem is one of diagnosis. The picture may be typical of neonatal intestinal obstruction. In the cases reported here massive abdominal enlargement was the presenting symptom. Such enlargement, sometimes causing obstruction or delay in delivery, could be due to the presence of a solid tumour, such as a kidney; but dullness and a fluid thrill indicate fluid. Whether a large fluid-filled cyst or viscus (such as the bladder) can give the same clinical picture we cannot say. A scrotal swelling with an impulse communicating with the peritoneal cavity is presumptive evidence of free fluid.

The possible causes of ascites at the time of birth are meconium peritonitis or chylous ascites, but a bladder vastly distended with urine may be difficult to distinguish. Purulent peritonitis, while theoretically possible, must be extremely rare. A case of so-called foetal appendicitis diagnosed by a coroner (Jackson, 1904) does not read convincingly. Hill and Mason (1925) described as prenatal appendicitis a fatal case of meconium peritonitis due to perforation of the proximal part of the appendix. As the peritoneal fluid was sterile the case can hardly be regarded as one of infection. The gut is expected to remain free from bacteria from the time of birth until some time after 48 hours; and diagnosis and treatment should be carried out during this period.

Two simple tests should help differential diagnosis—aspiration with examination of a sample of the fluid, and a plain *x*-ray film of the abdomen, particularly the lateral view. In meconium peritonitis the fluid is thick, albuminous, heavily bile-stained, and contains fat, cholesterol, and epithelial squamae on microscopy. In chylous ascites the fluid appears milky-white and has a chemical composition resembling chyle. Urine should be recognized on chemical testing.

The *x*-ray film in meconium peritonitis shows calcification as a fine tracery. The extent of aeration of the gut is also seen, but within the first 24 hours, unless one loop of intestine is grossly dilated, obstruction cannot be diagnosed. If the air cannot be seen in the rectum in the lateral view at or after 24 hours an obstruction in the intestinal tract is presumed to be present.

Two cases of meconium peritonitis with ascites, without intestinal obstruction, successfully diagnosed and treated, are described in some detail. In both, examination of the aspirated ascitic fluid established the diagnosis. A communication was assumed to exist between the lumen of the gut and the peritoneal cavity which required immediate closure before the arrival of bacteria in the bowel. What was uncertain before operation was whether the gut was normal or congenitally obstructed, and when and why the hole had appeared. The record of Case 1 has been published under the charge nurse's name as the first of its kind successfully treated in England (Gover, 1950).

Case 1

A male child was delivered normally at home, July 19, 1950, by Dr. Lucy Elliott. A normal boy had been born two and three-quarter years before, and the mother had been well during this second pregnancy. There was some delay in the second stage and after the birth of the head. The baby breathed spontaneously and the colour rapidly became

pink. After a stitch had been put in the mother's perineum the baby was again examined, and the colour found to have changed to a greyish pallor. Respiration was very rapid and the abdomen extremely distended. The baby was brought immediately to St. Bartholomew's Hospital and admitted; aged 2 hours.

On examination the baby was cyanosed and breathing rapidly, the abdomen was grossly distended with obvious superficial veins on the anterior wall, dull to percussion, with a fluid thrill. A diagnosis was made of free fluid or possibly fluid in a large cyst or dilated viscus. The abdomen was aspirated and 5 ml. of heavily bile-stained fluid removed from the right iliac fossa. In the fluid were seen red and white blood corpuscles, lipoid - containing phagocytes, a few cholesterol crystals, and "Maltese cross" cholesterol esters. There were no visible organisms, and cultures were sterile. Fouchet's test and the delayed direct van den Bergh reaction were positive. There was no tryptic activity, but a trace of amylase and much protein. Abdominal *x*-ray films at 5 hours (Figs. 1 and 2) showed areas of calcification characteristic of meconium peritonitis. The stomach and part of the intestine contained air, which had not progressed through to the rectum, an appearance normal for the age of the baby. The character of the fluid and the *x*-ray evidence of calcification established the diagnosis of meconium peritonitis, and a communication between the gut lumen and the peritoneal cavity was assumed.

FIG. 1.—Case 1. A.P. radiograph taken when the patient was 5 hours old.

FIG. 2.—Case 1. Lateral radiograph taken when patient was 5 hours old.

Treatment and Progress

The baby was given "synkavit," 2.5 mg. intramuscularly, distaquaine penicillin, 150.000 units daily, and streptomycin, 30 mg. six-hourly. A cannula was left in the peritoneal cavity through which 350 ml. of fluid slowly drained in eight hours. At 24 hours the abdomen was opened (J. P. H.) through a right paramedian incision, the baby being anaesthetized with ether and oxygen. A large quantity of thick brown fluid was drained away and flakes of lymph and some small solid pieces were swabbed out, leaving the large peritoneal cavity as empty as possible. The parietal peritoneum was grossly thickened by organizing lymph, and in places felt quite rough from the deposit of calcified material. The intestines formed a relatively small mass in the left hypochondrium firmly matted together by and covered over with thick fibrin. In the middle of the mass at a level above and to the left of the umbilicus could be seen a circular hole with mucous membrane pouting out of it. The intestines were matted so firmly together that it was impossible to decide into what portion of the intestinal canal this hole opened. The latter was closed with fine catgut in two layers, the deeper being continuous and the superficial interrupted. The abdomen was closed in layers without drainage. A subcutaneous infusion of N/5 saline with "hyalase" was started. The baby's condition at the end of the operation was very good.

The second day passed uneventfully On the third day feeds of water and then expressed breast milk were given with a Belcroy feeder. The subcutaneous saline was stopped after 48 hours, the streptomycin after six days, and the penicillin after seven days, when the stitches were removed. The baby passed some pale meconium on the third day, followed by a little dark blood. Thereafter bowels were opened three to six times daily. On the second and third days after operation streptokinase (2 ml.), kindly supplied by Dr. I. A. Cathie, was injected into the peritoneal cavity.

The weight on admission was 5 lb. 3½ oz. (2.4 kg.), including ascitic fluid. The baby was discharged home on the fourteenth day, fully breast-fed and weighing 5 lb. 8 oz. (2.5 kg.).

The baby's progress has since been entirely normal. At the age of 7 months he weighed 20 lb. (9.1 kg.), was on a normal diet for his age, and appeared to be developing normally. A barium follow-through examination was reported as normal; calcification was still visible in the right hypochondrium. At 21 months he weighed 28 lb. (12.7 kg.).

Stool at age of 2 years gives complete digestion of the standard gelatin substrate at a dilution of 1 in 1,600. On microscopy a wet film of the stool appears normal. These findings rule out pancreatic fibrosis in this case.

Case 2

This child, a male, was born at Queen Charlotte's Maternity Hospital, on September 13, 1951. The mother had previously had two normal girls. She was of rhesus-negative blood group without antibodies. The second stage of labour (L.O.A. presentation) was delayed unaccountably. This delay was found to be due to gross distension of the abdomen. The birth weight was 8 lb. 15½ oz. (4.1 kg.), and the baby appeared cyanosed and distressed; the respiration rate was 80 a minute and the pulse 150. The abdomen was very large, dull to percussion, with a fluid thrill. The scrotum was large, containing fluid which communicated with the abdominal cavity. There was a soft swelling superficial to the abdominal muscles in the left iliac fossa, the nature of which remains unknown, but which had disappeared by the age of 5 months. The lower limbs were not oedematous. An abdominal *x*-ray film showed a minute speck of calcification in the right hypochondrium. The baby was admitted to St. Bartholomew's Hospital at the age of 4 hours. Aspiration of thick bile-stained fluid from the right iliac fossa confirmed the diagnosis of meconium peritonitis.

Treatment and Progress

Intramuscular injections were given of synkavit, 5 mg., distaquaine penicillin, 150.000 units repeated daily from September 13 to 20, and streptomycin, 125 mg. daily in four doses (September 13–23). By slow drainage through a cannula 14 oz. (400 ml.) of bile-stained fluid was removed from the peritoneal cavity. This fluid is described as yellowish brown and glutinous, alkaline to litmus, specific gravity 1020. Microscopical examination showed some red and some white blood corpuscles, epithelial cells, mucus, fat globules, and occasional plaques of degenerate squamous epithelium. Fouchet's test for bilirubin, and the direct delayed and the indirect van den Bergh reactions were strongly positive. Fat and a trace of cholesterol were present. Protein was calculated at approximately 4.7 g. per 100 ml. (including mucus); chloride (as NaCl) 550 mg. per 100 ml.; urea 330 mg. per 100 ml. Cultures were sterile.

At 24 hours the abdomen was opened (J. P. H.), the baby being anaesthetized with oxygen and ether. The intestines

were found matted together with bile-stained fibrin. The gut was normal in size for the age of the baby. There was nothing to suggest any obstruction. No hole could be found, and after a search the abdomen was closed without drainage. The post-operative condition was good, but it deteriorated on the fifth and sixth days. The abdominal circumference on the latter day at the level of the umbilicus was 18½ in. (46 cm.). An abdominal *x*-ray film (Fig. 3) showed a fluid level. Gas and bile-stained fluid were withdrawn from the peritoneal cavity. On culture this fluid grew *Bact. coli* and *Str. faecalis*, both sensitive to chloramphenicol.

FIG. 3.—Case 2. Radiograph taken aged 6 days, showing a fluid level.

On the seventh day (September 20) the abdomen was reopened through a new incision, and this time a hole similar to that in Case 1 was found; this was sewn up and the abdomen cleaned up and closed without drainage. Four days later the lower part of the wound broke down and discharged faeces for three weeks. Chloramphenicol was given by mouth in suspension from September 21 to October 8, 125 mg. daily in three doses, and 62 mg. a day from October 8 to 15.

The mother attempted breast-feeding and seemed to provide enough breast milk, but the bowels were opened from six to nine times daily and there was no gain in weight. The weight, which had dropped to 6 lb. 11 oz. (3 kg.) on September 26, had increased only to 7 lb. 2 oz. (3.2 kg.) by October 20. Although the motions were loose they were neither fatty nor offensive. Tests for trypsin were negative in the stools (October 22) and in duodenal juice (October 25). Although these findings do not make certain a diagnosis of pancreatic deficiency or fibrosis at this age, the baby was given pancreatin granules (2 g. a day), and began to gain weight at once. He was discharged home on November 5, fed partly breast and partly a half-cream milk, aged 7½ weeks, and weighing 8 lb. 4 oz. (3.7 kg.) with the wound completely healed.

An abdominal *x*-ray film at this time showed marked calcification (Fig. 4) of the parietal peritoneum, as compared with the doubtful speck seen seven weeks earlier.

He was weaned from the breast at 4 months. Re-examined at 5 months of age, he was a well-grown normal baby weighing 18 lb. (8.2 kg.), with a very large appetite, and taking 12-oz. (340-ml.) feeds of full-cream dried milk four times a day. The duodenal juice contained no trypsin, and, although progress has been so satisfactory, the diagnosis of fibrosis of the pancreas has been made.

FIG. 4.—Case 2. Radiograph taken aged 7 weeks, showing calcification of parietal peritoneum.

The difficulty in this case arose from the failure to find a hole in the gut and to sew it up at the time when the gut contents were sterile. The control of *Bact. coli* infection by chloramphenicol certainly contributed greatly to the eventual recovery of the baby, but comparison of the two cases points to the importance of early diagnosis and to treatment within the first 48 hours. We have decided, should no hole be apparent on the next occasion, to pass a soft rubber tube into the stomach and slowly bubble oxygen through, if necessary filling the abdomen with sterile normal saline, on the principle used to find small punctures in bicycle tyres.

Conclusion

Perforation of the intestine in the foetus in the absence of any recognizable obstruction, with escape of bile into the peritoneal cavity, seems in these cases to have led to intense chemical peritonitis. The intestines were found embedded in a thick fibrin layer, so that it was impossible even to recognize in what anatomical part of the intestine, large or small, the lesion existed. In the first case there was marked calcification in the parietal and visceral peritoneum at birth; in the second this appeared during the course of observation, though Dr. Rohan Williams was satisfied that the *x*-ray film at birth showed a minute but definite amount. In neither case was there bacterial peritonitis at 24 hours, but in the second this occurred later. In neither was there clinical evidence of obstruction at the time of the peritonitis or at any later period. The first patient appears to be a normal boy. The second is a case presumably of pancreatic fibrosis. Why there was a hole in the intestine in either case is difficult to understand.

The cases are reported because circumstances enabled the diagnosis to be made within a few hours of birth. This allowed the successful treatment of what has so often been recorded as a neonatal calamity.

REFERENCES

Falkenheim and Askanazy, M. (1892). *Jb. Kinderheilk.*, **34**, 71.
Gover, E. M. (1950). *Nursing Times*, **46**, 934.
Hill, W. B., and Mason, C. C. (1925). *Amer. J. Dis. Child.*, **29**, 86.
Jackson, W. F. (1904). *Amer. J. med. Sci.*, **127**, 710.
Low, J. R., Cooper, G., and Cosby, L. (1949). *Surgery*, **26**, 223.
Neuhauser, E. B. D. (1944). *Amer. J. Roentgen.*, **51**, 421.
Rudnew, W. (1915). Quoted by Low *et al.* (1949).
Skiles, J. H. (1928). *J. Amer. med. Ass.*, **90**, 1618.
Thelander, H. E. (1939). *Amer. J. Dis. Child.*, **58**, 371.

Every three months the Rockefeller Foundation issues a bulletin of how it has spent its money that quarter. In April–June this year the Foundation gave away about ten million dollars (about £3½m.), some of it to institutions, some to individuals for special inquiries, some to Americans, but a great deal to various European and Eastern countries. In Britain, the Burden Neurological Institute at Bristol received £9,000 for four years' research in neurophysiology, St. Thomas's Hospital Medical School £4,500 for an inquiry into the relation between human physical form and physiological function, the Institution of Civil Engineers £12,000 for training and research in public health engineering, and Cambridge University £600 to pay for an assistant in *x*-ray crystallography to Sir Lawrence Bragg. Special dollar grants went to Dr. S. C. Truelove (Oxford) to visit the U.S. and Canada to study experiments in medical education ($2,525); Miss L. P. Yule (Department of Child Life and Health, Edinburgh) to observe American methods of social work ($2,025); Dr. D. A. Sholl and Professor B. Katz (London) $400 and $460 respectively to visit neuroanatomical and physiological research centres in the U.S. The Nuffield Institute for Medical Research at Oxford received $1,800 to buy a special *x*-ray tube, the University of Glasgow $6,700 for special biochemical equipment, and the University of Leeds $2,450 for biophysical research. This was the aid for the quarter to medical research in Britain.

A NEW OPERATIVE METHOD OF CAUSING THROMBOSIS IN VARICOSE VEINS

BY

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Massive retrograde sclerosant injections of the saphenous vein at the groin have been criticized lately for a variety of reasons. The method is said to be relatively uncertain and it occasionally produces severe local and general reactions. Above all, *x*-ray studies after injection of radio-opaque sclerosants have shown rapid entrance of the solution into adjoining deep veins (Boyd, 1948).

In the investigation conducted by Professor Boyd retrograde injections were made into the distal end of the saphenous vein divided at the groin. In every case large quantities of solution passed into the femoral vein through a perforating vein in the lower third of the thigh. Ten minutes after injection further *x*-ray films showed radio-opaque sclerosant still present in the femoral vein. Evidently there is a possibility that serious deep-vein thrombosis, leading to permanent disability, may be caused by a commonly practised treatment of varicose veins.

It is not surprising, therefore, to find that at the present time there is a tendency towards abandoning the use of sclerosants in the form of massive retrograde injections. A number of alternative methods of treatment are being currently developed, but there is no unanimous opinion on which is the best of them. The method described here in application to a small series of cases has been the subject of detailed clinical study checked by histological investigations. It leads to a thrombosis at least as effective as that caused by the chemical sclerosants, without possessing any of their known disadvantages. Briefly, the method consists in leaving at operation a length of silk ligature within the lumen of the vein.

Evidence is produced to show that a firm non-bulky clot is thereby obtained, the thrombus organizing to produce complete obliteration over any desired length of vein. No ill effects have so far been observed, and identical results have invariably been produced in each case. Theoretical disadvantages have been kept in mind and are discussed below. The method of introducing the silk ligature is quite simple, and is combined in other respects with orthodox operative procedure.

Operative Procedure

Skin Preparation and Towelling.—The whole limb from groin to foot is carefully prepared, and the foot is wrapped in a sterile towel and threaded through the aperture in an abdominal towel. The skin has been previously marked at the site of visible or palpable tributaries in the ordinary manner.

Operation.—Through the usual oblique inguinal incision a sapheno-femoral ligation is performed, with ligation of all tributaries according to the orthodox procedure. However, before division of the main vein and excision of a portion, a narrow tape is passed round the vein and handed to an assistant. The vein is then incised and the smallest head of a Babcock vein-stripper is inserted into the lumen. The vein-stripper is then passed gently downwards until its head is felt in the region of the knee. At the same time the assistant crosses over the two ends of the tapes so as to prevent haemorrhage from the vein, which otherwise can be fairly considerable.

A longitudinal incision is then made over the head of the vein-stripper so as to expose a reasonable length of vein in order to identify and ligate any tributaries at the knee. The head of the stripper is identified inside the vein and another tape passed round the vessel distal to it. Through an incision in the vein wall the stripper head is extruded and attached to a long silk ligature of No. 3 twisted silk, prepared by soaking for 30 minutes in 50,000 units of penicillin solution. The thread is touched only with forceps, in order to avoid accidental contamination, and is not allowed to touch the skin at any point. Its end is knotted round the vein-stripper just behind the head, which is then withdrawn groinwards, carrying the length of thread with it into the lumen of the vein. When the stripper head emerges from the vein in the groin the whole length of the silk thread is of course lying in the vein. It is secured by ligating the vein round it above and below, and the upper end is detached from the vein-stripper. A portion of vein between this and the flush ligation is excised in the groin and the skin wounds are sutured.

The process is then repeated with the remainder of the vein below the knee. It is better to enter this part of the vessel at the ankle, as the head of the vein-stripper will not catch on the remnants of any valves when it is passing in the direction of the blood flow. This consideration does not apply to the vein above the knee, because the calibre there is much greater compared with the diameter of the vein-stripper head, and valve remnants can always be negotiated by a little gentle manœuvring. Extreme tortuosity of the vein is, however, likely to cause difficulty, and a flexible vein-stripper with a smaller head would be a great advantage in use (Webb, 1951).

Results

Up to the present time only a small series of cases have been treated, as it was desired to study the mechanism of the thrombosis produced and to anticipate any dangers or disadvantages in using the method on a larger scale.

Detailed observations have been carried out on each vein treated, the clinical impression being checked by microscopical examination of repeated vein biopsies. At first only small sections of vein were treated. Later, as results were found to be invariably the same and no ill-effects were noted, larger sections were treated and the technique described above was worked out.

Case Reports

Case 1.—Mrs. A. Marked internal saphenous varicosity. No pigmentation, eczema, oedema, or ulceration. *Treatment:* (1) Sapheno-femoral ligation. (2) 4 in. (10 cm.) of vein in calf isolated and threaded with silk ligature. *Result:* Firm thrombosis followed by obliteration, confirmed by biopsy ten days and one month after operation.

Case 2.—Mr. B. Internal saphenous varicosity. No complications. *Treatment:* (1) Sapheno-femoral ligation. (2) 6 in. (15 cm.) of vein below knee threaded with silk ligature. *Result:* Firm thrombosis followed by obliteration, confirmed by biopsy ten days and one month after operation.

Case 3.—Mrs. C. Large varicose ulcer nearly encircling leg, 21 years' duration; followed injection treatment. Varicose veins had recurred after high ligation carried out at another hospital 25 years previously. *Treatment:* (1) Ligature at sites of recurrence in thigh. (2) Length of silk thread left in lumen of large vein feeding ulcer. (3) Local streptomycin treatment to ulcer followed by patch grafts of split skin to remaining unhealed areas. (4) Compression by one-way stretch bandage. *Result:* Feeding vein thrombosed. Incidentally, ulcer healed completely.

Case 4.—Mr. D. Internal saphenous varicosity. No complications. *Treatment:* (1) Sapheno-femoral ligation. (2)

2 in. (5 cm.) of vein at ankle threaded with silk ligature. *Result:* Clinically firm thrombosis. No biopsy.

Case 5.—Mrs. E. Internal saphenous varicosity. Small indolent ulcer at ankle, present for three years. Pigmentation. *Treatment:* (1) Sapheno-femoral ligation. (2) Whole length of internal saphenous from groin to knee threaded with silk ligature. *Result:* Firm thrombosis followed by obliteration of whole length of vein treated. Biopsy at ten days. Ulcer healed. No patent veins visible or palpable. Free of symptoms.

Case 6.—Mr. F. Internal saphenous varicosity. No complications. *Treatment:* (1) Sapheno-femoral ligation. (2) Whole length of saphenous vein threaded with silk ligature; in two portions, from groin to knee and from knee to ankle. *Result:* Firm thrombosis followed by obliteration of whole length of vein treated, confirmed by biopsy at ten days and one month after operation. Had transient difficulty in fully extending knee owing to presence of tight cord representing thrombosed internal saphenous vein. Final result very satisfactory. No patent veins visible or palpable. Free of symptoms.

Case 7.—Mrs. G. Internal saphenous varicosity. No complications. *Treatment:* (1) Sapheno-femoral ligation. (2) Whole length of vein from groin to 4 in. (10 cm.) below knee threaded with silk ligature. *Result:* Firm thrombosis followed by obliteration of vein, confirmed by biopsy. Clinically very satisfactory.

Comment.—In each case the line of the treated vein was clearly palpable within 48 hours of operation. On the evening of the second day after operation in the cases in which silk thread was left in lengths in vein exceeding 6 in. (15 cm.) there was slight fever without constitutional disturbance. The vein became tender and easily palpable along the whole length treated, and the skin overlying the vein was slightly reddened. At the end of a further two days tenderness was very much less and the fever had abated, although the vein was still clearly palpable. By the tenth day after operation, when the first biopsy was taken under local analgesia, the veins were hardly tender, but were easy to locate.

Report on Vein Biopsies

Macroscopic

After incising the skin on taking the first biopsy, a layer of oedematous subcutaneous fat was encountered. Lying on this was the somewhat enlarged rubbery vein, opaque white in colour and rigid to the touch. On dividing the vein to remove the biopsy specimen no bleeding from either end was noted. On inspecting the cut surface about two-thirds of the thickness was seen to be composed of firm white tissue, representing gross fibrous thickening of the original vein wall. the original lumen was occupied by a small dark-coloured thrombus and by the silk ligature, which was of course completely unchanged in appearance (Fig. 1).

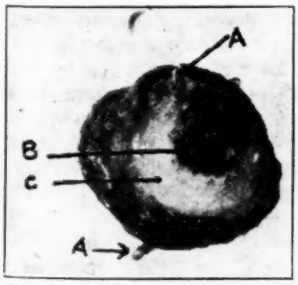

FIG. 1.—Photograph of ½-in. (1.3-cm.) length of varicose vein removed 10 days after treatment. Cut surface viewed end on. A–A: silk thread protruding from lumen B, which is filled with dark clot. Pale grossly thickened vein wall clearly shown at C.

At the second biopsy, taken one month after the original operation, the vein was still easily palpable, though very much smaller. It was completely painless, and there was no pigmentation of overlying skin. Oedema of the surrounding tissues had subsided. Again no bleeding was noted on dividing the vein. On this occasion the whole of the vein lumen was seen to be occluded by firm white tissue, and there was no recognizable clot present. The silk ligature appeared unchanged.

Microscopical

Serial sections were carried out on all specimens. Every tenth one was stained with haematoxylin and eosin, and at least one section of each specimen was stained with van Gieson and elastic, and one with reticulin stain. Transverse, oblique, and longitudinal sections of the various specimens were made. In all of them the process illustrated was almost identical. The biopsy specimen of an untreated varicose vein was also sectioned for comparison with the treated veins. (Fig. 2).

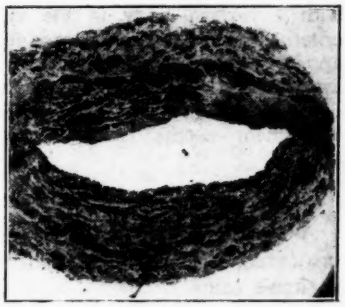

FIG. 2.—Untreated varicose vein. (H. and E. ×11.)

Report on the sections was as follows: "All the sections show that the vein walls contain an excess of fibrous tissue in all layers; in the transverse sections the silk thread is well shown with a surrounding aseptic inflammatory reaction, including in some cases giant cells; the thrombus is in successive states of organization — namely, (*a*) Ten-day Biopsy: There is an early fibrous replacement, beginning at the periphery of the thrombus and centrally round the silk. There is already a thickened and fibrous intima (Fig. 3). (*b*) One-month Biopsy: The lumen is largely filled by young vascular fibrous tissue, with a considerable foreign-body giant-cell reaction round the thread. Again, here the intima shows some old fibrous thickening (Fig. 4). In general, the veins show fibrous replacement of tissues in the walls, and the intima appears thickened and fibrosed; the obstruction to the lumen is by thrombus undergoing fibrous replacement, and this fibrosis appears to begin at the periphery of the thrombus and round the silk thread and to spread from these two places to obliterate the lumen."

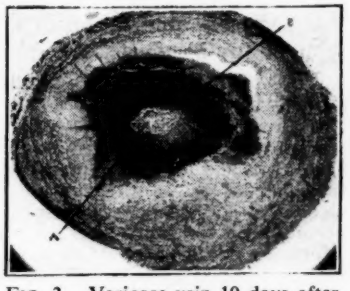

FIG. 3.—Varicose vein 10 days after treatment. A=silk thread; B=thrombus in early stages of organization. (H. and E. ×9.)

FIG. 4.—Varicose vein one month after treatment. A=silk thread; B=young fibrous tissue completely replacing thrombus. (H. and E. ×18.)

Discussion

Raeburn (1951) has restated the initiating causes of thrombosis as (*a*) venous stasis ; (*b*) disordered metabolism of vascular endothelium, leading possibly to increased adhesiveness ; (*c*) intimal trauma ; and (*d*) sepsis. Venous stasis would certainly result from partial occlusion by a foreign body. The presence of aseptic inflammation has been shown by vein biopsy. Intimal damage may occur from repeated small traumata produced by limb movements with a foreign body in the vein lumen. Some of the criteria, therefore, for the production of venous thrombosis appear to be satisfied. Clinical implications of the method are obvious. The relation of the method to other forms of treatment has yet to be determined. A more definite assessment awaits the progress of adequate follow-up studies.

Summary

A new method of causing intravascular thrombosis is presented, with particular reference to the treatment of varicose veins.

It consists in leaving a length of silk ligature within the lumen of the vein.

Clinical and histological evidence is produced to show that complete obliteration of the vein invariably results without any ill effects, general or local.

The mechanism and clinical implications of the method are discussed.

I wish to thank Mr. Peter Martin for allowing me to publish these cases and for help in preparing this report. My thanks are also due to Dr. J. P. Whitehead, Director, Morbid Anatomy Laboratory, St. Margaret's Hospital, Epping, for preparing and reporting on the histological material, and to Mr. Kenneth G. Moreman for the photomicrographs.

REFERENCES

Boyd, A. M. (1948). *Proc. roy. Soc. Med.*, **41**, 633.
Raeburn, C. (1951). *British Medical Journal*, **2**, 517.
Webb, A. (1951). *Surgery*, **29**, 276.

FRICTION INJURIES FOLLOWING ROAD ACCIDENTS

BY

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Modern road transport causes injuries which were unknown a few decades ago. The lesion described below is a torsional one, usually produced by the tyre of a motor vehicle trapping or passing over part of the body. It is not always recognized and the best treatment can be given only if its nature is understood. The one constant feature is the stripping of the skin and subcutaneous tissues from the deeper structures. The skin itself may be intact, but more often it is split wide open, and in these cases the friction may damage tendons and nerves. Fractures are present in less than half the cases, and are produced by some other mechanism—for example, angulation. Experience of 20 cases provided the basis for this paper.

Early Experiences

The first case encountered was that of a man aged 48 who was run over by a car and sustained a compound fracture of the right femur. There was a rather large puncture wound on the antero-medial aspect of the upper part of the thigh. This was treated by excision, the wound being extended and quite a large haematoma evacuated. When the wound had been closed the fracture was controlled by skin extension in a Thomas splint. The patient had an irregular pyrexia. A week later the whole of the skin of the thigh was seen to be badly bruised and blistered, and after a few days became converted into the black leathery slough of local gangrene. Skeletal traction solved the problem of the femur, but the skin loss became very troublesome (Fig. 1).

FIG. 1.—Late stage of a "closed" injury. Initially a fractured femur with a puncture wound only, the leg is here photographed after the slough had separated. There is complete skin loss from abdomen to knee on all aspects of the thigh.

FIG. 2.—Late stage of an "open" injury. Healing time, six months. The skin flaps were so badly damaged that they were completely lost. Earlier healing would have followed a primary excision and skin graft.

Antibiotics were not available, and the extensive area became secondarily infected. Skin grafts were quite ineffective, and the man gradually became more toxic and emaciated. Four months after his accident he died.

The second case appeared to have little in common with the above when it was first seen. A boy aged 4 was run over by a van and was brought to hospital with a massive wound extending from the big toe to the top of the thigh. Enormous flaps of skin had been peeled off the muscles, which were heavily contaminated with road dirt. In spite of the widespread skin damage, *x*-ray examination revealed no injury to bone. After an extensive wound toilet and suture the child's progress was good. There was some sloughing of the skin, which was grafted one month later, but the leg was completely healed in just over three months.

Mechanism

In these injuries, with the assistance of the patient, eye-witnesses, and the police, one of three stories was obtained : (1) The patient was truly "run over" ; (2) the vehicle pulled up with one wheel trapping the patient, and sometimes had to be reversed to release the patient ; or (3) the patient was flung clear of the vehicle, skidding along the ground with some force.

It seems that the skin is gripped by the rubber of the tyre, and as the wheel is lifted a very strong rotational force

is imparted to the superficial structures only. The connexion between the subcutaneous tissues and the deep fascia breaks down before the stretched skin tears. Thus in cases with the skin intact the full extent of the damage may not be recognized early. If the skin gives it does so on the opposite side of the limb from where the frictional force is applied (see Fig. 3B). The skin flaps are unequal in size, the flap nearest the frictional force being the longer.

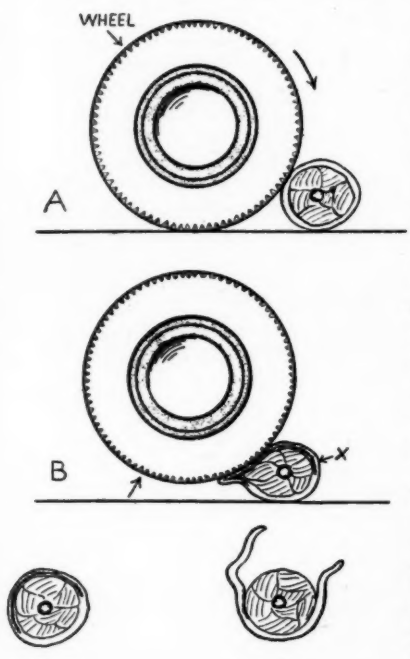

FIG. 3.—A. As the wheel touches the part the frictional force is applied. B. As the wheel mounts the part the skin is drawn round. Whether the part is run over, trapped, or thrown clear, the damage is done. C. If the skin does not break apparent normality is restored. *The lesion is concealed.* D. If the skin breaks it usually does so in the region of X shown in B. *The lesion is obvious.*

There are a number of factors which determine the extent of the frictional injury:

(1) *Weight of Vehicle.*—It is the heavy vehicle, such as the motor-bus, which inflicts this injury.

(2) *Speed of Vehicle.* — Fast-moving vehicles may cause only slight bruising. This can be explained by the strain being more short-lived, but unevenness of the road and good springing may well be the important factors. The speed is most frequently 10–15 m.p.h.

(3) *Tyre Pressure and Road Conditions.*—A dry low-pressure tyre exerts the strongest friction.

(4) If the vehicle is swerving the outside wheels may be exerting less pressure, and could be actually clear of the ground.

Pathology and Chief Clinical Features

The skin, together with the loose connective tissues which move with it, is stripped off the less mobile muscles and the bones. The depth of the stripped layer varies even in one individual case—in parts it may be extremely bruised and thin, but in well-covered subjects it usually contains a rather generous thickness of fat. It is this layer, through loss of blood supply, which undergoes necrosis. Delayed skin gangrene will then follow, and secondary sepsis is to be expected. In the closed injury the haematoma may embarrass the vessels at the periphery of the tear and make the lesion more extensive. The subsequent history of the case depends on the success or otherwise of vascularization of the stripped flap, and any treatment must encourage this.

Electric mangle injuries to the extremities have the same pathology.

In a road accident of some severity the case with widely open skin flaps presents only a problem of how it should be treated. It is the closed injury, which is likely to go on to delayed necrosis, that needs to be recognized early. Here, shock is often greater than the deeper injuries would suggest. The coat, trousers, or footwear may give valuable information of the violence which caused this injury. The skin itself is abraded and bruised early, and may bear the imprint of the tread of the tyre. Wheals may be present. Unnatural mobility of the skin should be noted, or later an extensive haematoma.

Twelve Typical Cases Treated at Nottingham Children's Hospital, 1949–51

Sex/ Age	Type of Accident	Lesion	Final Healing	Progress Notes
M 3	Run over by bus wheel at 10 m.p.h.	Open. Foot. Extensor tendon of hallux torn	3 mths.	Late scarring, causing dorsiflexion contracture of toes. Cross leg flap—then tendon graft
M 6	Run over by trolley bus at 12 to 15 m.p.h.	Open. Arm. Areas of complete skin loss. Fractured humerus, radius, and ulna	5 ,,	Repeated skin grafts. Late scarring ++, stiff elbow (movements half normal)
M 8	Run over by trolley-bus wheel	Open. Ankle. Extensor tendon of hallux torn	3 ,,	Slight scarring only. Not complaining of trouble from big toe
F 8	Run over by bus wheel at 15 m.p.h.	Open. Whole leg. No fracture. External popliteal palsy	4 ,,	Split-skin grafts. Moderate scarring of skin. Neurolysis of external popliteal nerve
M 5	Run over by bus wheel at 15 m.p.h.	Open. Ankle. Rupture tibialis anterior and extensor longus hallucis	8 ,,	Graft on to bone. Area rubbed on shoe. Late cross-leg flap and then tendon grafts
M 6	Dragged by wheel of heavy lorry	Open. Leg. Bones of foot crushed —part of foot missing	3 ,,	Immediate amputation, below knee
M 4½	Trapped by bus wheel at 2 m.p.h.	Transverse burst foot. Fractured toes	2½ ,,	Suture under tension ++. Swelling slow to settle. Complete recovery
F 4	Tossed by wheel of lorry	Closed. Simple fracture of tibia	2½ ,,	Extensive superficial gangrene at two weeks. Sloughs removed and grafts applied one week later
M 11	Trapped by bus wheel	Closed. Foot and ankle	1 mth.	Early small incisions. No gangrene. Complete recovery
F 5	Tossed by 3-ton van	Open. Thigh and abdomen. Fracture of pelvis. Rupture of vagina	2 mths.	Extensive removal of fat from flaps. No flap sloughing. Suture line rather slow to heal. No scarring
M 8	Trapped by car wheel	Closed. Hand. Fracture of metacarpals	1 mth.	Swelling slow to settle
F 10	Tossed by Ford V8	Open "Sleeve" stripped from mid-arm to mid-forearm. Fracture clavicle same side	3 mths.	Fat trimming, but no drainage of posterior flap, which sloughed owing to haematoma below. Subsequent skin grafts

Treatment

Open Case.—A thorough wound toilet should be carried out under operating-theatre conditions. All severely contused skin as well as unhealthy skin margins should be excised. Avulsed skin with no blood supply can be replaced as a Wolfe graft if the underlying fat is removed; it may take well. The base of the wound must be extensively cleaned up, and damaged muscle and fascia removed, in order to provide a healthy vascular bed for the flaps, which are of doubtful viability. Fat should be completely removed from the deep surface of the flap at the torn margin, and towards the base of the flap until it bleeds freely. The wound is then treated with a fine dusting of penicillin-sulphathiazole powder, and the flaps sewn together, making sure there is no undue tension. A thin flap may die if a haematoma forms, but a few stab wounds in the lowest part of the flap, if possible through healthy skin, may prevent this. Any raw areas remaining should have split-skin grafts. A dressing is then put on with an even pressure, and splintage is usually necessary.

Closed Case (early).—If an extensive necrosis is anticipated, a long incision should be made and the case be treated as an open one. If only a suspicion exists, then any haematoma under high tension should be evacuated through a small incision and the part kept under observation until the danger is obviously over. Massive skin gangrene can be avoided by timely intervention.

Closed Case (late).—When skin gangrene has occurred the black slough should be removed surgically before secondary sepsis becomes established. If the base of the wound is then

deepened to healthy tissues, it will usually be possible to apply immediate split-skin grafts. After two weeks further grafts may be advisable.

In spite of the use of the methods outlined, final healing of extensive lesions often takes three months. With experience this time can be reduced to a minimum. When final healing does occur the skin is often puckered and scarred. This may be so severe that a flap or pedicle graft is required, especially if any further operation becomes necessary in the involved area. In this short series, two feet have required cross-leg flaps for this reason.

Summary and Conclusions

The open and closed varieties of friction injuries sustained in road accidents have been described and the importance of careful treatment has been stressed.

The open lesion is quite common, but good judgment is of great importance in its management. The antibiotics have made surgical treatment and early skin-grafting safer.

The closed lesion is rarer. If it is not recognized early, skin gangrene may be found when a plaster is removed. Medico-legally, it is important to realize that bandaging and splintage have in no way been responsible.

The cases were treated in the traumatic units of Liverpool Royal Infirmary and the Nottingham Children's Hospital. My thanks are extended to Mr. Norman Roberts for permission to publish the two cases illustrated. I also wish to acknowledge the helpful guidance of Mr. A. N. Birkett, under whose care most of the cases were admitted. (Fig. 1 was taken by the photographic department of the General Hospital, Nottingham, and Fig. 2 by the Central Photographic Department of the University of Liverpool.)

BIBLIOGRAPHY

Bonnin, J. G. (1946). *Complete Outline of Fractures.* Heinemann, London.
Borchard, A. (1938). *Zbl. Chir.*, **65**, 2196.
Farmer, A. W. (1939). *Ann. Surg.*, **110**, 951.

DISOBLITERATIVE ENDARTERIECTOMY OF THE EXTERNAL ILIAC ARTERY

BY

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Case Report

A man aged 68 was referred to hospital on April 27, 1951, complaining that a month previously he had had a sudden pain in the right calf while walking. Subsequently he had cramp-like pain in the right calf which compelled him to halt after walking a distance of 300–400 yards. The pain was quickly relieved by rest. At the same time the right foot became cold.

On examination his general condition was good. His blood pressure was 140/80. The general appearance of the right lower limb was normal. The right foot was colder than the left. The pulse could not be felt in the right external iliac artery or in any of the arteries of the right leg. On the left side the external iliac, common and superficial femoral, popliteal, posterior tibial, and dorsalis pedis arteries pulsated strongly. The oscillometric index in the right thigh was 2½ and in the right calf 1¼, as compared with 8½ and 9 in the left thigh and calf respectively. A clinical diagnosis of thrombosis occluding the right external iliac artery was made. A plain *x*-ray film of the abdomen and lower limbs showed slight calcification in the walls of the lower abdominal aorta, but none in the arteries of the legs.

Aortography on June 26 showed an obliteration of the external iliac artery from its origin extending down as far as 1 cm. or so above the bifurcation of the common femoral artery. Filling of the main vessel below the obliteration was through numerous collaterals derived from the branches of the internal iliac artery.

Operation

On July 5, under general anaesthesia, the iliac vessels were exposed extraperitoneally and the incision was continued across Poupart's ligament to expose the common femoral artery. The external iliac and common femoral arteries were pulseless. Clamps were placed on the common and internal iliac arteries and on the femoral artery below the obliteration. The external iliac artery was incised to a depth sufficient to expose the yellowish necrotic inner coat adherent to the contained thrombus. An easy plane of cleavage was found here between the inner and outer layers of the arterial wall and developed over the full length of the obliteration. Disobliterative endarteriectomy was completed by severing the inner arterial coat at each end of the thrombus (see photograph). Free bleeding then occurred from each end. After tightening the clamps the 12-cm. longitudinal incision was closed with a continuous suture of 00000 black silk. On release of the clamps pulsation was seen and felt throughout the previously inert external iliac artery and in the femoral artery beyond the previously obliterated segment. At several points along the suture line a pulsatile leak of blood required supplementary interrupted stitches.

Photograph of operation specimen. At the lower end a part of the central thrombus is exposed where its sheath of internal arterial coat is defective.

Intravenous heparin was given throughout the operation to lengthen the clotting-time between 15 and 30 minutes, and the interior of the artery was irrigated with heparin during the suture.

Post-operative Progress.—The patient made an uninterrupted recovery. The wound healed by first intention. There was no post-operative haemorrhage. He was discharged from hospital on July 26.

When seen on September 6, nine weeks after the operation, the patient was walking normally. He said he could do so at a slow pace for an unlimited distance without any cramps, though these still occurred in a mild form if he hurried. He had completely lost the sensation of coldness in the foot, and is fully satisfied with the result of the operation. On examination both feet were equally warm. Pulsation was palpable, though of small volume, in the right external iliac and common femoral arteries, and very faint pulsation was felt in the popliteal artery. It could not be detected with certainty in the posterior tibial and dorsalis pedis arteries.

Comment

The technique of disobliterative endarteriectomy employed in this case is that devised by Reboul in 1947 and a modification of that first employed by Dos Santos (Reboul and Laubry, 1950). Its essential feature is that the endarteriectomy is performed under direct vision through a longitudinal incision which opens the artery over the whole extent of the thrombosed segment. In this way complete removal of the obstruction is possible with the least risk of injury to the remaining coats of the artery. The vessel is left with a perfectly smooth inner surface, and the likelihood of reobliteration by post-operative thrombosis is thus minimized. This contrasts with the blind removal of the obstruction through multiple small arteriotomies in Dos Santos's original method.

Orthodox methods of surgical treatment of arterial thrombosis aim at promoting the collateral circulation by interruption of sympathetic pathways, either centrally by ganglionectomy, or peripherally by arteriectomy of the thrombosed

segment. This is often successful, even in the senile obliterations, in improving the vegetative state of the limb and so protecting against gangrene. Its effect on intermittent claudication—the commonest disabling symptom—is much more uncertain. In many cases no improvement in the claudication follows an otherwise satisfactory sympathectomy. Some of the results of disobliterative endarteriectomy suggest that this may have a more direct effect on claudication than can be achieved by dilatation of the collateral vessels. Thus in one of my cases claudication was completely relieved by endarteriectomy of the femoral artery several months after a lumbar ganglionectomy which had had no effect on this symptom. In another case, with bilateral claudication, a lumbar sympathectomy was performed on one side and a femoral endarteriectomy on the other (Forty, 1951). The relief of the claudication was much greater on the side treated by endarteriectomy.

An essential preliminary to disobliterative endarteriectomy is a good arteriogram demonstrating a localized thrombosis in a main artery with a permeable lumen beyond it. In these circumstances the operation is indicated, provided that the patient's general condition warrants a longish intervention under general anaesthesia, with special reference to the risk of post-operative coronary or cerebral thrombosis in elderly arteritic persons. Cerebral thrombosis 10 days after operation caused the one death in my personal series of eight disobliterative operations.

Severe haemorrhage from the wound may result from the administration of heparin. In one of my cases of disobliteration of the whole length of the femoral artery and beginning of the popliteal artery the wound had to be reopened five hours later because of severe bleeding. The femoral artery was seen pulsating well at the bottom of the wound, and the suture line was intact. The haemorrhage was due to capillary oozing from the muscles and fasciae, and was controlled by packing. Secondary suture of the wound, performed four days later, was followed by good healing and a satisfactory functional result.

Summary

A case of successful disobliterative endarteriectomy of the external iliac artery is reported.

The technique, indications, and complications of the operation are briefly discussed.

My thanks are due to Miss M. H. Shaw for the photograph.

REFERENCES

Forty, F. (1951). *Proc. roy. Soc. Med.*, **44**, 148.
Reboul, H., and Laubry, P. (1950). Ibid., **43**, 547.

Cambridge University Press has published *Alumni Cantabrigienses* (vol. 4, part 2) a biographical list of students, graduates, and holders of office at the University from the "earliest times" to 1900. Biographies are necessarily short, but many entertaining details emerge (*Nature*, July 26, p. 131). A high proportion of members went into the Church; the Rev. Edward Kempe is said to have left behind him a ton of unpreached sermons. Diplomat Henry Labouchere contracted a debt of £6.000 in two years at Cambridge, joined a circus, lived in a Red Indian camp, was dismissed from the diplomatic service for impertinence to Lord John Russell, became an M.P., and then a successful journalist working for the *Daily News* and *Truth*. About 90 Fellows of the Royal Society are mentioned; other famous scientists include Le Verrier, Lister, and Sir John Murray. A large number of graduates were Fellows of the Society of Antiquaries—the Earl of Crawford, for instance, founder of Dunecht Observatory, who went to Mauritius to observe the transit of Venus in 1874. Another who travelled far from Cambridge was James Losh, who went to Paris to study the French Revolution and had his life saved by Marat, who had been a practising physician in London. On his 103rd birthday C. F. L'Oste, who had never consulted a doctor, went up in an aeroplane.

CONGESTIVE SPLENOMEGALY DUE TO PANCREATIC CYSTADENOMA

BY

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Cystadenoma of the pancreas appears to be an uncommon condition, to judge by most publications. Not all authors agree to this, however: Haukohl and Melamed (1950) point out that, while they could find only 63 authentic cases in the literature, many others were "buried in reports on pancreatic surgery, hidden in discussion of wholly unrelated non-neoplastic conditions, or reported under a variety of erroneous diagnoses." Study of the available literature indicates that most of the recorded cases presented as problems in surgical or radiological diagnosis, because of either abdominal pain or a palpable tumour.

We should like to add another case, not only because of the uncommonness of the condition but also on account of the nature of the symptoms which have not previously been noted.

Case Report

The patient was a woman aged 39, who was first seen by us in October, 1947, when she was admitted after a severe haematemesis. She said she had vomited blood for the first time in 1939, when a diagnosis of peptic ulcer was made; and she had had melaena nine months before admission. Apart from these episodes her only other complaint was of intermittent vague epigastric discomfort which bore an inconstant relationship to food. Her appetite was good and she had not lost weight.

On examination she was pale and moderately shocked; there was a little tenderness in the epigastrium. The spleen was readily palpable below the left costal margin. The lungs and cardiovascular system were normal apart from a blowing systolic murmur at the apex of the heart. A blood count showed: haemoglobin, 42% (Haldane); red cells, 2,300,000 per c.mm.; white cells, 5,000 per c.mm. (polymorphonuclear 84%, lymphocytes 15%, monocytes 1%); the film showed moderate anisocytosis and abundant platelets. One pint (570 ml.) of group O rhesus-negative blood was transfused as an emergency measure; subsequently she responded well to oral iron. Bleeding and coagulation times and red-cell fragility were normal. No abnormality was found in the bone marrow apart from rather overactive haemopoiesis. The van den Bergh reaction was negative, and there were no abnormal urinary pigments. Films of material obtained by spleen puncture did not reveal any pathological tissue. Fractional gastric analysis showed moderate hypochlorhydria; barium swallow and meal failed to demonstrate oesophageal varices or ulceration in the stomach and duodenum.

The patient was discharged after six weeks in hospital with a diagnosis of congestive splenomegaly; the haemoglobin level was 84% (Haldane). Between October, 1947, and August, 1949, she was admitted to hospital six times—on four occasions with haematemesis, once with melaena, and once because of lassitude and lack of energy resulting from prolonged occult bleeding in the gastro-intestinal tract. Her condition at these times varied; blood transfusion was

required more than once, and she was taking oral preparations of iron in the intervening periods.

In August, 1949, it was felt that, in view of these repeated haemorrhages, surgical intervention offered the only hope of cure. She was admitted to the Royal Southern Hospital, Liverpool, in October, being then in reasonably good health. The only abnormal physical sign was the enlarged spleen, which extended well below the costal margin. The blood count was : haemoglobin, 89% (Haldane) ; white cells, 5,000 per c.mm., with a low normal polymorphonuclear count and a mild lymphopenia ; platelets, 100,000 per c.mm. Repeated tests for occult blood in the faeces were negative. The galactose tolerance and hippuric acid synthesis tests revealed no evidence of liver insufficiency. Oesophagoscopy on October 15 showed that there were no oesophageal varices, but it was noted that the gastric mucosa bled very easily.

Laparotomy was performed on October 24 by Mr. J. Cosbie Ross. When the abdomen was opened a large cystic mass was found arising from the body and tail of the pancreas ; the cyst stretched and compressed the splenic vein, resulting in engorgement of the spleen and vasa brevia, with consequent hyperaemia of the gastric mucosa. To facilitate removal of the cyst, splenectomy and partial resection of the tail and body of the pancreas had to be carried out. The wound was closed with drainage.

Convalescence was satisfactory, though for a short time there was a raised fasting blood sugar with occasional glycosuria. On the sixteenth day after operation a glucose-tolerance test showed that the blood sugar was 200 mg. per 100 ml. half an hour after ingestion of 50 g. of glucose. The hyperglycaemia and glycosuria gradually subsided, however, and when the patient was discharged 12 days later carbohydrate tolerance was within normal limits.

Pathological Histology.—The cyst removed at operation measured 12 by 10 by 8 cm. Its surface was smooth and lobulated, and intimately connected with the tail and body of the pancreas, the splenic vessels being stretched over it. Microscopically, the tumour tissue showed the picture of a well-formed, regular mucus-secreting cystadenoma with no evidence of malignancy. The pancreas was normal except for a little dilatation of the ducts. The spleen weighed 280 g., and had the typical appearance of early so-called " Banti's syndrome." The rather small size of this organ was probably accounted for by manipulation during removal.

Discussion

The chief interest in this case lies not so much in the rarity of the pathological condition as in the nature of its manifestation. Among the previously recorded cases the most common symptoms were (*a*) pain, generally of a vague character, and indefinitely related to meals ; (*b*) dyspeptic symptoms attributable to disease in the biliary tract, such as gallstones ; (*c*) a palpable mass ; (*d*) a diabetic syndrome of variable severity (Carling and Hicks, 1925 ; Bowers *et al.*, 1942 ; Benson and Gordon, 1947 ; Jemerin and Samuels, 1948 ; Herrman and Asbell, 1949 ; Johnson and Gibson, 1950). In all these cases one or other of the first three complaints caused the patient to come under the care of a surgeon from the outset ; the diabetic state was usually associated with the main symptom, and indicated that the pancreas was involved in the pathological process.

We have not been able to find any reference in the literature to gastro-intestinal haemorrhage as a symptom except in one case quoted by Malcolm (1906). In our case haematemesis and melaena were the outstanding features, and at no time after she came under our care was the patient troubled by pain or dyspepsia. The tumour mass was never palpable, although careful abdominal examination was carried out on many occasions by different observers. Glycosuria appeared for the first time after operation. There was therefore no clear-cut indication for surgery until the eventual decision was made with the object of reducing the portal hypertension. In fact, the presence of the enlarged spleen was regarded as sufficient reason for conservative treatment.

The term " Banti's syndrome " is no longer fashionable, and has been generally abandoned in favour of the definitive terminology of " congestive splenomegaly " or " hepatolienal fibrosis." As Learmonth (1951) points out, neither of these terms is entirely suitable, for in a small number of cases intrahepatic or extrahepatic block cannot be demonstrated, and the liver may be apparently normal. In the present case, however, the liver was macroscopically and biochemically unaffected, while the splenic vein was obviously obstructed by the tumour ; therefore congestive splenomegaly would seem to be the correct term to apply.

The point we wish to make is that surgical intervention should be considered in all cases of congestive splenomegaly, and it should be borne in mind that a tumour (as in this case) may be the underlying cause of the condition ; if this is the case the prognosis is good.

We should like to express our thanks and indebtedness to Dr. R. W. Brookfield and Mr. J. Cosbie Ross, Royal Southern Hospital, Liverpool, who kindly took over the subsequent care and treatment of the patient.

REFERENCES

Benson, R. E., and Gordon, W. (1947). *Surgery*, 21, 353.
Bowers, R. F., Lord, J. W., and McSwain, B. (1942). *Arch. Surg., Chicago*, 45, 111.
Carling, E. R., and Hicks, J. A. B. (1925). *Brit. J. Surg.*, 13, 236.
Haukohl, R. S., and Melamed, A. (1950). *Amer. J. Roentgenol.*, 63, 234.
Herrman, C. S., and Asbell, N. (1949). *Amer. J. Surg.*, 78, 107.
Jemerin, E. E., and Samuels, N. A. (1948). *Ann. Surg.*, 127, 158.
Johnson, T. M., and Gibson, D M. (1950). *Sth. Surg.*, 16, 878.
Learmonth,, Sir J. (1951). *British Medical Journal*, 2, 67.
Malcolm, J. D. (1906). *Trans. clin. Soc. Lond.*, 39, 175.

Medical Memoranda

A Very Slowly Developing Hypernephroma

The following case of hypernephroma is worthy of publication, as it possessed several interesting features.

CASE REPORT

A man aged 55 was first seen by one of us (R. P.) on September 26, 1944, complaining of pain and stiffness in the muscles of his right shoulder-girdle. There was limitation of voluntary and involuntary movement at the right shoulder-joint, with marked muscle wasting. His blood pressure was within normal limits, and his urine contained much albumin. On October 14, before he had seen a specialist, he had a urethral haemorrhage with retention of urine. His prostate was not enlarged. He was passing a little urine and clots per urethram. On catheterization a large quantity of dark blood-stained urine was obtained, and next day he was admitted to hospital. *X*-ray examination showed a secondary tumour in the upper end of the shaft of the right humerus, with a spontaneous fracture, and the left kidney was reported much enlarged. As treatment was regarded as of little avail, he was sent home to die on October 18 with a diagnosis of hypernephroma of the left kidney and metastasis in the right humerus.

He had a good deal of pain in his right shoulder and looked very sick ; we decided to try stilboestrol therapy, 5 mg. thrice daily. Within a week clinical improvement was noted. His colour was better, he had less pain in his right shoulder, there were no urinary symptoms, and only a trace of albumin was demonstrated in the urine. As he had improved so much he was seen again at the hospital on January 5, 1945, when the growth in the humerus was larger than before, and red cells were still demonstrable in the urine. The patient, however, continued to improve clinically ; he put on weight and had a good appetite. He

was able to use his right arm a little and did some light gardening, and was able to get about. He was very uncooperative about further investigations, but insisted that his improvement was attributable to the stilboestrol tablets, which he continued to take regularly and which did not appear to have any untoward effects.

A further intravenous pyelogram on April 4, 1946, showed a normal right kidney, but the left kidney was double the normal size and showed poor excretion. *X*-ray examination of the right humerus showed recalcification of the bone, with cystic appearances—so much so that it was thought the diagnosis might lie between localized cystic osteitis and osteoclastoma. No evidence was obtained of tumours in the lungs or elsewhere. Further recalcification of the cystic areas in the right humerus was demonstrable on *x*-ray examination on June 15, 1946. A retrograde pyelogram and a biopsy of the affected part of the humerus was suggested, but the patient refused. He died on March 1, 1951, six and a half years after the onset of his first symptoms. Throughout he had been taking the same dose of stilboestrol, and, though he did not resume work, he kept comparatively well until after Christmas, 1950, when a sudden rapid deterioration took place. He never complained of other symptoms beyond weakness in his right arm.

Post-mortem Examination.—A large left-sided hypernephroma was found, measuring 16 cm. across, which had displaced all kidney tissue except parts of the pelvis in the lower pole. There were some small terminal secondaries in the lungs, while the initial secondary (in the arm), which had first manifested itself six and a half years previously, had grown to an enormous sausage-shaped growth, measuring 30 cm. in length, and had replaced practically all the tissues of the right upper arm, which consisted, to all intents and purposes, of nothing but this large tumour, covered by intact skin. The forearm merely showed pronounced subcutaneous oedema.

COMMENT

This case is remarkable because of the long survival (over six and a half years), with the presence of a large secondary for all that period, and for the clinical improvement following the administration of stilboestrol. It is difficult to say whether stilboestrol had any effect at all, or whether this was a case of very slowly progressing hypernephroma (see *Choyce's System of Surgery*, 1932, **1**, 440, Plate 32). The recalcification of the humerus at one stage of the disease is interesting, but it is known to occur in pathological fractures of long standing.

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A Case of Carotinaemia

Although carotene is physiologically present in the skin, imparting a yellow component to the normal colour (Edwards and Duntley, 1939), only rarely are sufficient amounts present to cause carotinoderma. The condition is always caused by pathological amounts of carotene in the blood (carotinaemia) due to ingestion of excessive quantities of foods containing carotene, especially carrots and oranges, and to a lesser extent to an overabundance of green vegetables in the diet. The following case is of interest, first, because the patient suggested the correct diagnosis to her medical adviser many months before its true nature was elicited; secondly, because another practitioner thought the yellow colour was a dye caused by working some years previously in a munitions factory; and, thirdly, on account of the unusual involvement of the soft palate.

CASE REPORT

A housewife aged 28 was admitted to hospital with a threatened abortion. She was 28 weeks pregnant. The house-surgeon noticed that her palms, soles, and face were unnaturally yellow in colour. He suspected that dye was responsible, and reported that the colour disappeared when the skin was rubbed vigorously with cotton-wool soaked with ether meth. I saw the patient four days later. Her skin was of normal texture, but there was a bright yellow discoloration of the forehead, cheeks, and nasolabial folds, and a deeper yellow, almost orange, discoloration of the palms and soles. The edges of the affected areas faded gradually to normal skin colour. The only other abnormal finding was the startling yellow appearance of the soft palate. This had a sharply demarcated border at its junction with the hard palate, which was normal. She did not wear dentures. In attempting to demonstrate the fading of the colour when rubbed with ether meth., it was apparent that the colour was, in fact, irremovable. The house-surgeon had been misled by the blanching of the skin; if he had waited for 10 seconds after applying the ether meth. he would have seen the yellow colour return unaltered.

Investigations showed a moderate degree of hypochromic anaemia, normal white cell count, negative van den Bergh reaction, and blood cholesterol within normal limits. The urine was of normal colour and contained no abnormal constituents.

Her history revealed that she had no great liking for oranges, but had been eating 1 lb. (454 g.) of raw carrots daily for the past 12 months. Her reason for this extraordinary dietary fad was that she had been advised by a friend to eat raw carrots as a treatment for constipation. She found this most successful and also developed a tremendous liking for the vegetable.

She noticed the yellow discoloration of her skin four months later (before she became pregnant). She commented on the fact to her general practitioner and asked whether the carrots were responsible. She was told there was no relationship, so continued to eat the carrots.

On omission of carrots from the diet the discoloration of the skin faded rapidly, and had entirely disappeared after four weeks. Her pregnancy continued.

COMMENT

According to most textbooks which mention this disease it has to be differentiated from jaundice. This should be straightforward, as the pigmentation is not always generalized, the sclerae remain uncoloured, while the distribution of colour is maximum in the nasolabial folds and on the palms and soles, whereas in jaundice these are least affected and mucosal membranes and sclerae are most coloured. Urine and faeces are unchanged, there is no itching of the skin, and no effect on general health. The pigment is transmitted by breast milk (Jegners, 1943). Greene and Blackford's (1926) three-layer test makes possible the diagnosis of carotinaemia despite the presence of excessive quantities of bilirubin in the blood. Equal parts of serum, alcohol, and petroleum-ether shaken together in a tube separate into three layers on standing. The top layer of petroleum-ether contains the carotene pigment, the middle layer of alcohol holds the bilirubin, and the bottom layer consists of precipitated serum proteins.

Despite this emphasis on the differential diagnosis from jaundice, this diagnosis was not even considered in the above case, and of five cases described by Almond and Logan (1942) only one was referred to hospital as a case of jaundice. The others were cases of pernicious anaemia, haemolytic anaemia, and cholelithiasis, and a breast-fed infant aged 2 months.

Various explanations have been given for the fact that the areas of maximum concentration of pigment are fairly constant. Wood and Agnor (1914) state that excess carotene is destroyed in the body or excreted in the sweat. Histological sections show that carotene is found principally in the superficial horny layer of the skin and that its concentration becomes less in the deeper layers. This is generally explained by assuming that when sweat excretion is heavy some of the pigment is reabsorbed by the horny layer. This is

supposed to explain why heavy deposits are found where the horny layer is particularly thick (palms and soles) and where sweating is most marked (palms, soles, forehead, nasolabial folds, axilla, and groin). The striking involvement of the soft palate in this case is difficult to reconcile with that theory.

Other observers have pointed out that children seem more prone to develop carotinoderma than do adults (Urbach, 1946), that sunlight is sometimes necessary to produce the cutaneous manifestations (Hess and Myers, 1919; Klose, 1919), and that vegetarians are rarely affected.

It seems, therefore, that, apart from the constant finding of excessive intake of carotene-containing foods, there is a marked individual variation in the tendency to develop this pigmentation.

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REFERENCES

Almond, S., and Logan, R. F. L. (1942). *British Medical Journal*, **2**, 239.
Edwards, E. A., and Duntley, S. Q. (1939). *Amer. J. Anat.*, **65**, 1.
Greene, C. H., and Blackford, L. M. (1926). *Med. Clin. N. Amer.*, **10**, 733.
Hess, A. F., and Myers, V. C. (1919). *J. Amer. med. Ass.*, **73**, 1743.
Jeghers, H. (1943). *New Engl. J. Med.*, **228**, 678.
Klose, E. (1919). *Münch. med. Wschr.*, **66**, 419.
Urbach, E. (1946). *Skin Diseases, Nutrition, and Metabolism*, p. 134. Heinemann, London.
Wood, R. H., and Agnor, E. B. (1941). *J. med. Ass. Ga*, **30**, 239.

Regional Ileitis Presenting as Recurrent Intestinal Haemorrhage

Variations in the initial clinical picture of regional ileitis have been recorded with increasing frequency since the condition was first described in 1932. The following case illustrates a rarely recorded presentation—namely, recurrent intestinal haemorrhage.

CASE REPORT

An engineer aged 45 was admitted in November, 1949, with a history of having passed dark blood and melaena stools on four occasions during the previous seven weeks. The exact quantities of blood passed were difficult to ascertain accurately, but that they were more than small may be judged by the fact that he developed anginal symptoms after the second. The haemorrhage on each occasion had occurred at the week-end, after physical exercise. He was otherwise fit and well, had not lost weight, his appetite was good, and there had been no abdominal pain, nausea, or vomiting. The bowel habit was unchanged and remained regular. There was no relevant past history.

On examination he was seen to be a well-built man of good nutrition; he did not look ill and was afebrile. There were no abnormal physical findings on examination of the cardiovascular system, apart from pallor of the mucous membranes, and the lung fields were clear. Abdominal examination revealed some vague tenderness in the right iliac fossa, but no rigidity, no generalized or localized distension, and no palpable masses.

Investigations.—Sigmoidoscopy to a distance of 25 cm. revealed no abnormality. Haemoglobin on admission was 38%; white-cell count 5,600 (polymorphs 84%, lymphocytes 12%, eosinophils 4%); platelets, 273,000 per c.mm.; bleeding-time 4½ minutes (Duke's method); clotting-time 3½ minutes (capillary method at room temperature). He was transfused with 4 pints (2.3 litres) of whole blood, after which his haemoglobin rose to 73%. Barium meal and follow-through showed a normal oesophagus and stomach with some stasis in the region of the ileum and caecum, the appearances being inconclusive. Barium enema examination revealed no abnormality.

During the rest of his stay in hospital he remained afebrile and symptom-free and had no further haemorrhage. He was discharged in December, 1949, with arrangements for follow-up as an out-patient.

He was readmitted in January, 1950, having remained fit and well until three days previously, when he suddenly felt a desire to empty his bowels, and passed dark red blood admixed with faeces. The next day the stool was observed to be a little darker than usual, but otherwise normal. The day following he had three further brisk haemorrhages, dark clots being passed, and this was repeated on the morning of admission.

Again he was otherwise well, with a regular bowel action until the onset of the haemorrhages, a good appetite, and no abdominal pain or vomiting. Physical examination revealed no change from the previous admission, except that there were now no abnormal physical findings on examination of the abdomen, the vague tenderness in the right iliac fossa being no longer present. He was still afebrile. Sigmoidoscopy again revealed normal healthy rectal and colonic mucous membrane. Haemoglobin on admission was 82% and the E.S.R. 16 mm. Blood urea was 34 mg. per 100 ml.

Laparotomy was performed on January 13 by Mr. J. R. Crumbie, when typical regional ileitis affecting the terminal 5 in. (12.5 cm.) of the ileum was found. The wall of the bowel was indurated and fibrosed, the mesentery was reddened and inflamed, and there were several small firm mesenteric glands. The rest of the alimentary tract was normal, including the appendix, and there was no Meckel's diverticulum. The terminal 12 in. (30 cm.) of the ileum and the colon as far as the mid-transverse region were resected with a side-to-side anastomosis and a stab drain was inserted in the right iliac fossa. On further inspection of the specimen marked thickening of the wall with oedema of the submucosa was found. The thickening increased distally and was most marked at the ileo-caecal valve. The submucosal oedema noticed proximally was less evident distally and fibrosis was a marked feature. Several shallow ulcers were visible, mostly along the mesenteric border, and the "cobblestone" appearance of the mucosa was present. The mesentery and fat were matted together. Microscopically, oedema of the submucosa with lymphoid hyperplasia was a marked feature. There was infiltration with plasma cells, eosinophils, and lymphocytes, and fibrosis involved the muscle coats and extended to the serosa. The musculature was disorganized in some areas by inflammation and fibrosis. Typical "tubercles" with giant cells were seen in the submucosa and in the serosa, and one in the longitudinal muscle bundles. Many such systems were observed in a section taken from the mesenteric fat.

Post-operatively, apart from a mild transitory looseness of the bowels lasting a few days, the patient made an uninterrupted recovery and was discharged symptom-free.

COMMENT

Although gross intestinal haemorrhage is a recognized feature of acute regional ileitis and acute ileo-jejunitis, Crohn observed that blood in the stool in the chronic stage of the disease is a rarity, both to the naked eye and to the guaiac test. Garlock stated: "The non-bloody diarrhoea is one of the main distinguishing clinical features from non-specific ulcerative colitis. This should be emphasized repeatedly." Hurst had, however, observed seven cases, in all of which occult blood was constantly present. In Crohn's series of 222 cases two had been observed in which intestinal bleeding was an initial symptom.

This case is of interest in that recurrent intestinal bleeding occurred in a fit man who remained symptom-free throughout, apart from the haemorrhages, and who, except for ill-defined tenderness in the region of the caecum noted on the first admission, remained free from signs of the disease. The advanced character of this was demonstrated at operation, although the radiological studies were inconclusive.

I wish to thank Dr. G. McComas and Mr. J. R. Crumbie for permission to publish this case.

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Reviews

FREELANCE OF SCIENCE

Louis Pasteur. Free Lance of Science. By René J. Dubos. (Pp. 418. 18s.) London: Victor Gollancz. 1951.

Dr. Dubos is an eminent microbiologist with chemical leanings. Louis Pasteur was a chemist who became the Father of Microbiology. It is entirely suitable, therefore, that Dubos should write a biography of Pasteur. As he says, "Few lives have been more completely recorded than that of Louis Pasteur." But this is more than a mere biography : it is a history of the early discoveries of microbiology and of the successes which followed the work of the great master and his disciples. There is no fiction in the book, but it is all written in a style which reads like a novel.

We see young Pasteur engaged in his study of tartaric acid crystals and his solution of the mystery of racemic acid. We see him after his crucial experiment rushing out of the laboratory and meeting one of the chemical assistants in the hall, embracing him and exclaiming, "I have just made a great discovery. . . . I am so happy I am shaking all over and am unable to set my eyes again to the polarimeter"—a fine example of his enthusiasm, which he retained to the end. So began stereochemistry. We see him later in Lille studying alcoholic fermentation and peering through his microscope at the rounded yeasts of the healthy fermentation and the smaller bodies in the fermentations which were spoilt. We see him gradually turning from being a chemist to become a microbiologist, and engaging in the great controversy on spontaneous generation. This gave him scope for his experimental genius and for his love of argument.

Then we see him studying the diseases of wine, beer, and vinegar and introducing pasteurization for the preservation of alcoholic liquor. Having cured diseases of beverages, Pasteur attacked with success disease of silkworms, then of animals, and lastly of man. In the meantime he had propounded a germ theory of disease and had shown that some microbes could flourish in the absence of air—a commonplace nowadays—but then a momentous discovery.

This most attractive volume gives us a picture of Pasteur as a man and a scientist. The subtitle "Free Lance of Science" is a good description. His was not the philosophy which is so common to-day that nothing can be done without team-work. He had devoted helpers, but he himself was the team. Dr. René Dubos has produced a book that can and will be read not only by microbiologists but by everyone interested in science or in human effort. He is to be heartily congratulated. It is a book that will live as the greatest tribute in the English language to one of the greatest benefactors of mankind.

ALEXANDER FLEMING.

GALTON AND EUGENICS

Three Memoirs. By Sir Francis Galton. (Pp. 23. 1s. 6d.) London: Cassell and Co., for the Eugenics Society. 1952.

Inquiries into Human Faculty and its Development. By Sir Francis Galton. (Pp. 261. 7s. 6d.) London: Cassell and Co., for the Eugenics Society. 1952.

Eugenics: Galton and After. By C. P. Blacker, *M.C.*, G.M., M.D., F.R.C.P. (Pp. 349. £1 5s.) London: Gerald Duckworth and Co. 1952.

The three short memoirs were originally part of the *Inquiries Into Human Faculty* as published in 1883, but were omitted from the second edition. They include a statistical inquiry into the efficacy of prayer, enthusiasm, and the possibility of theocratic intervention. All are interesting reading, as indeed are the *Inquiries* as a whole.

Blacker's book is divided into two parts. The first is on Galton, and the author discusses the manifold activities of this extraordinary man, but especially the development of his ideas on eugenics. Since eugenics has tended to be identified with "right wing" politics in the minds of several people, Blacker does well to point out that Galton was by no means a "reactionary." He was not opposed to Socialism, but doubted if mankind's moral stature was capable of maintaining a co-operative society. He was insistent that eugenic measures should be subject to public consent and that eugenists should not claim more than they could perform. Unfortunately some of his more vocal disciples have not followed his lead in either case.

Part II is on the developments since Galton's day. Blacker tries to cover an enormous amount of ground, dealing with new testing procedures, population growth, and genetics. It is the last of these that are of greatest direct interest to eugenists.

At the present time probably no single person "knows" genetics ; Blacker disarmingly remarks that if such a person does exist it is not himself. Unfortunately it is in this respect that the book shows its greatest weakness. Blacker devotes some space to developments of the subject, such as the giant chromosomes of certain flies, which are of no direct importance to eugenists and omits a great deal (one might say almost everything) that is. Eugenics being primarily concerned with selective breeding, one would expect that some account of the Mendelian aspects of selection should have been mentioned. The only contribution that Blacker has to make here is to quote with approval a statement of Fraser Roberts that the prospects of practical eugenics are improved by the genetic complexity of socially important human traits—a statement that is complete nonsense. Questions such as random mating and degrees of inbreeding are also of great importance, but receive no adequate treatment.

Blacker is at great pains to show that eugenics is not politically reactionary, and he succeeds in doing so. He does not succeed in showing that it is particularly important at the present time. It is admittedly desirable that socially valuable persons should have more children than they do, while certain others should have fewer, but it must be remembered that it will take many generation for any eugenic measures to have any noticeable effect on the population as a whole.

P. A. GORER.

SYMPOSIUM ON HYPERTENSION

Hypertension. A Symposium held at the University of Minnesota, September 18 to 20, 1950, in honour of E. T. Bell, M.D., B. J. Clawson, M.D., and George E. Fahr, M.D. Edited by E. T. Bell (Pp. 573; illustrated. £3.) Minneapolis: University of Minnesota Press. London: Geoffrey Cumberlege. 1951.

This admirable work records a symposium on hypertension held at the University of Minnesota in the autumn of 1950 in honour of Drs. E. T. Bell, B. J. Clawson, and G. E. Fahr. It consists of 30 papers by 24 eminent authorities in this field, together with accounts of the discussions that followed them at the meeting. A collection of so many excellent papers under one cover is a great achievement, and the book will be widely welcomed by all those interested in advanced medicine. Indeed, it is a model that might well be copied in other subjects, for it sets a high standard in all respects ; it is a fine tribute to Bell, Clawson, and Fahr. Practically every aspect of hypertension is covered in detail, and the writing throughout is crystal clear and sometimes inspired. A tremendous amount of laborious work is incorporated, but, as in a good work of art, one is conscious only of the finished masterpiece.

When the standard of all contributions is so high, it is difficult, if not presumptuous, to pick out a few for special comment. But as highlights should be mentioned the remarkable discovery of the substances known as V.E.M. and V.D.M. by Ephraim Shorr, and the promising work by J. W. Gofman on the relationship of certain blood lipoids to atherosclerosis. The practising physician will welcome the figures given by Smithwick of the mortality rates of surgically and medically treated hypertensive patients ; and E. A. Hines gives some impressive figures of the incidence of subsequent hypertension in vascular hyper-reactors compared

with normal controls and hypo-reactors. There are several excellent reviews of experimental hypertension and the part played by the kidneys, especially those by Braun-Menendez and Herbert Chasis. The biopsy material from the kidneys by Smithwick and Castleman is also illuminating.

PAUL WOOD.

INTRODUCTION TO STATISTICS

Statistics for Medical and Other Biological Students. By L. Bernstein, M.R.C.S., L.R.C.P., and M. Weatherall, D.M. (Pp. 180. 18s.) Edinburgh and London: E. and S. Livingstone. 1952.

In the course of their training medical students tend to forget or ignore their basic instruction in scientific method, and this book commendably attempts to make good this deficiency. The authors describe the simpler and fundamental statistical techniques and the logical basis of their derivation and application, assuming in the reader only a moderate competency in arithmetic and algebra. They are obviously anxious not to omit anything of importance in statistical theory and have therefore not always been content to discuss one point at a time or to restrict their subject matter. Such writing does not make the student's task easier. He would have difficulty in understanding the short and not entirely accurate account of analysis of variance in purely algebraic terms, or the equally brief introduction to probits, both techniques described without any worked example.

The book is chiefly disappointing for its omissions. Because a medical student should have a scientific outlook it does not follow that he will usually become a laboratory worker, the type of reader to whom the book is most suited. It is doubtful whether any general practitioner could be persuaded of the relevance to his work of the topics discussed here, while those engaged in clinical or epidemiological research are hardly catered for. Field trials and sample surveys, now so important a feature of medical research, are given relatively little attention. Vital statistics are the concern of general practitioners, consultants, and those engaged in public health, and the starting-point of many of our most profitable researches, yet they receive only passing reference. Drs. Bernstein and Weatherall have contributed another to the several introductory manuals on statistics, but they do not seem to have satisfied the specific needs of medical students.

J. KNOWELDEN.

COLLECTIVE ADVENTURE

Le Service de Santé en Grande-Bretagne. By Yves Vincenot. Preface by P. Durand. (Pp. 266. 900 francs.) Paris: Librairie Armand Colin. 1952.

This book, published under the auspices of La Fondation Nationale des Sciences Politiques, is worthy of its promoters and does great credit to M. Yves Vincenot, the author. M. Paul Durand, professor of law, University of Nancy, says in his introduction that it is "the first book which in France has dealt with precision and impartiality with one of the most remarkable innovations in contemporary social politics." It is a useful, if at times a sobering, experience to know what a distinguished lawyer of another country thinks of the Act which embodies this social experiment. M. Vincenot has obviously taken immense pains to master his facts. With the help of the British Council he spent some time here, and the book is well documented. It is evident that as a social observer he is fascinated with the audacity of the scheme.

As a lawyer he is doubtful about the technical construction of some parts of the Act, and describes these as "not satisfying the French reader who is keen on legal clarity." In his opinion the system could be considered legally watertight only if every doctor were in the Service and its adequacy were thus assured to the patients. The State, he says, "cannot guarantee an absolute right to full medical service unless it becomes the absolute master of the medical profession, of its recruitment, its status, and its distribution." However, later he wistfully concludes that it is difficult to construct a synthetic theory, as Englishmen don't seem to care about such. He insists that the position of the doctor is not that of a party to a contract, because the Minister or Parliament can alter the conditions, while the doctor cannot, and legally a contract assumes *mutual* obligations.

He traces the idea underlying the scheme in much detail through the Beveridge Report, debates in Parliament, and discussions in the profession, and arrives at the conclusion that finally the doctors agreed to collaborate "sans enthousiasme." He has much to say about the inevitably increasing cost of the Service and thinks it ought to have been foreseen. His chief fears for the success of the Service are concerned with its finance. The Minister, he says, "opened the floodgates of absolute freedom with a sort of promise by the State of everything for nothing, whereas the reserves available show definite limits, and the national rush for the free for all could only compromise the quality of the services offered."

Like the majority of the French medical profession he hankers after a "payment per service" system. The capitation system, he considers, threatens to reduce the interest of the general practitioner in the individual patient. The State, he says, "has presented the doctors with this dilemma—either to try to get the maximum number of patients with the certainty of routine and inefficient work, or to content themselves with an inadequate income." Thus, he says, "the best kind of doctor is penalized."

He has his doubts about the new method of classifying and paying consultants, since he fears that for the sake of security at the outset of their careers they may have exchanged what he calls "the indispensable liberty of competition." But he confesses he has no perfect solution to offer.

Space will permit only a short review of a book which deserves the attention of all interested in the social problems involved. Critical as the author can be, he always seems to me to be fair and always willing to testify to the greatness and value of the experiment he is analysing. He ends by saying that "Mr. Bevan has acted only as a catalyst to pre-existent forces. The post-war generation was ripe for State planning. England has chosen security for all—doctors and patients. Between the two eternal fundamental doctrines—that which values the way of individual adventure and that which cares more for the collective adventure—England has chosen the second. It is for those who have so chosen—the politicians, the professions, the people in general—to make it a success. Nothing will be gained by looking back."

ALFRED COX.

GYNAECOLOGICAL NOTES

Medical Treatment in Obstetrics and Gynecology. By C. Frederic Fluhmann, M.D., C.M. (Pp. 158; 27 figures. £1 4s.) London: Baillière, Tindall and Cox. 1951.

In this small book the non-surgical treatment of gynaecological conditions receives more attention than the management of the disorders of pregnancy. A surprising amount of useful information is kept within limited compass by the liberal use of tables and by writing in note form. The work is not meant to be comprehensive but consists rather in notes and suggestions on problems which the author himself found difficult on entering practice. Reference is made easy by an alphabetical arrangement of subjects in some parts. The author describes the methods of treatment simply but with the detail so necessary for practice. He makes even hormone therapy appear easy. Dietetic treatment receives special attention, and there are all manner of useful tips on subjects ranging from radiation burns and sickness to the weighing of a patient whose size outstrips the scale on the weighing machine.

Dr. Fluhmann has produced an interesting book, but so far as readers in Britain are concerned its value is limited, because most of the proprietary preparations mentioned are of American manufacture and not easily available here.

T. N. A. JEFFCOATE.

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THE W.M.A. AND I.L.O.

As most readers know, or should know, W.M.A. stands for World Medical Association. The stimulus to its formation in 1947 came from the B.M.A. It was established to succeed the Association Professionelle Internationale des Médecins, more familiarly known as A.P.I.M. The unit of membership is the national medical association, and the W.M.A.'s first two objects are: "(i) To promote closer ties among the national medical organizations and among the doctors of the world by personal contact and all other means available," and "(ii) To maintain the honour and protect the interests of the medical profession." The W.M.A. represents voluntary national organizations of medical men in various parts of the world, and its membership includes some 43 of these, the total number of doctors in them amounting to about 700,000. The I.L.O., or the International Labour Organization, was established in 1919 as "an autonomous associate of the League of Nations." It is an intergovernmental organization and now one of the specialist agencies of the United Nations. Its aim is, to quote from one of its leaflets, "to contribute to the establishment of universal and lasting peace by furthering social justice. It seeks by international action to improve labour conditions, raise living standards, and promote economic and social stability." It claims that it is unique among intergovernmental agencies in that representatives of management and labour share in making its decisions and shaping its policies. One way of achieving its aims is by promoting the protection of the worker against sickness, injury, and disease arising out of his employment. The I.L.O. has therefore for some years been interesting itself in the provision of medical care under schemes of social security. In 1927, for example, it drew up a convention on sickness insurance. Its recommendation on medical care was adopted by the International Labour Conference in Philadelphia in 1944. In June this year it had before its 35th session in Geneva a report on its proposed convention on minimum standards of social security.[1] This convention has been adopted and is open to ratification by I.L.O.'s member States.

An important appendix to this report was provided by a consultant group of medical experts convened by the World Health Organization (W.H.O.). When W.H.O. forwarded this report of its consultant group to I.L.O. it was at pains to point out that it should not be taken as an expression of policy by the World Health Organization. Nevertheless, I.L.O. must inevitably regard the report as having the weight of powerful opinion behind it, and must be strongly influenced by the views expressed in it. The W.H.O. consultant group consists of six distinguished members of the medical profession—from France, the Netherlands, Sweden, Belgium, the U.S.A., and the United Kingdom. Not one of these distinguished men is a practising doctor. Indeed, one of them, Dr. Henry E. Sigerist, is a well-known medical historian. The United Kingdom was represented by Dr. A. Leslie Banks, Professor of Human Ecology in the University of Cambridge. The others hold important positions in their respective health departments. When the W.M.A. learnt of the constitution and activities of this W.H.O. consultant group it sent delegates to W.H.O. and I.L.O., first of all to draw attention to the fact that in the W.H.O. consultant group there was no practising doctor, and, secondly, to put forward its views on social security schemes in so far as they affect the medical professions in the various countries represented in the W.M.A. The Council of the W.M.A. met in Brussels in May, and its social security committee reviewed the principles of social security laid down by the W.M.A. in Geneva in 1948 in so far as they concern the provision of medical care. The W.M.A. committee, under its chairman, Dr. Dag Knutson, drew up a document which it submitted to the I.L.O. in June. It is reproduced in this week's *Supplement*.

What in particular disturbed the W.M.A. social security committee and Council were the observations made by the W.H.O. consultant group on the methods of remuneration of doctors providing medical care in social security schemes. The three familiar methods are discussed—fee for service, capitation fee, and salary. The W.H.O. consultant group, noting that the fee for service is probably the most widely practised, suggests that "it exposes the physician to the temptation to care for a patient who should be sent to a specialist or an institution. It even gives an incentive for the prolongation rather than the reduction of illness." Of the capitation method the

[1] *Minimum Standards of Social Security*. Geneva, I.L.O., 1952. Report V (a) (:).

group observes that "it has the disadvantage of permitting a perfunctory quality of care since the physician receives no more reward for extra service." It goes on to say, however, that "it tends to induce a preventive emphasis in medical practice and the prompt referral of patients to specialists and hospitals when necessary, without fear of financial loss." Observing that the medical profession is opposed to the salaried system because it tends to be associated with supervision, the group goes on to say this: "For the latter reason, however, it makes possible the maintenance of technical standards and the supervision of medical performance by qualified leaders, whether in a governmental or voluntary service. Through this method, training, experience, and competence can enter into the determination of financial awards, and special inducements can be offered to attract physicians into rural areas and other sections where they are greatly needed. It facilitates the career of the young doctor and can make fullest use of medical manpower. It is conducive to the systematic provision of preventive services and to the pursuit of postgraduate study." It wisely adds: "Whatever the method of payment, the differentials should not be so great as to offer an excessive attraction to specialty practice, since the greatest need in most nations is for a larger proportional number of general family physicians."

It is easy to see from these observations that the W.H.O. consultant group favours the payment by salary of doctors working in social security schemes. It would be interesting to know if, when this consultant report came before the W.H.O., the British delegates commented on this apparent approval of payment by salary in preference to payment by capitation fee, the latter being accepted by the Ministry of Health under the last Government and the present one. These matters vitally concern the medical profession in this as well as other countries, because the I.L.O. convention on minimum standards of social security has been adopted, and if it is ratified by a sufficient number of governments it will become official policy and pressure will be brought to bear upon the member governments of I.L.O. to see that these recommendations are put into effect. What is advocated in Geneva to-day may be advocated by a British Government in, say, five years from now, the origin of the recommendation having by then been forgotten, at least by the medical profession. It is for this reason that medical men in Britain should recognize the importance of the W.M.A.'s intervention. The W.M.A. is by its nature and constitution apparently remote from the affairs of the practising doctor, but this act alone shows that it is indeed vigilant on their behalf. It should be noted, however, that the method of paying doctors is not written into the convention; but the consultant group's views are on record in an official I.L.O. report.

The W.M.A. statement published in this week's *Supplement* deserves close study. The twelve principles which it believes should govern the provision of medical care as part of social security schemes are there laid down once more and amplified in a series of annotations. These are preceded by a general statement on social security and its effect on the individual who sooner or later comes under the care of the doctor. This statement stresses the danger that social security schemes, however idealistically conceived, tend to lessen individual responsibility. Not only that, they create the illusion that there is a bottomless purse in the possession of the State into which everyone may dip, not in need but almost at whim. As the statement observes, "Benefits are only too often mistaken for rights"; and again, "If the ties between benefit right and contribution payment are loosened the individual will ignore the cost of the services given." In the particular point at issue between the W.M.A. and I.L.O.—payment by salary—the W.M.A. document contains an interesting annotation on principle number eight, which states that "it is not in the public interest that physicians should be full-time salaried servants of the Government or social security bodies." In the comment on this the following remark is made: "As a general rule, to pay by salary carries the risk of imposing limitation of effort, and in the case of the physician who provides personal medical care this is against the interests of the patient—in fact, detrimental to him." The comment concludes thus: "It is a sound principle to leave to each practising doctor the task of imposing upon himself those limitations of effort which by experience he knows are necessary if he is to give of his best to the patients under his care. Any attempt to restrict hours of work or capacity for earning a reward for work incurs the grave risk of attempting to produce a standard doctor for a standard patient—to put human nature into a strait-jacket."

There are many other things in the W.M.A. document pertinent to medicine wherever it is practised, and especially pertinent to practice under the N.H.S. in Britain to-day. It is hoped that members of the B.M.A. will read the document with care and decide for themselves how far present conditions of practice in Britain fit in with the principles laid down by the World Medical Association, of which the B.M.A. is a constituent member.

ARTIFICIAL RESPIRATION

Recently the Department of Defence in the U.S.A. has sponsored a large programme of research on manual artificial respiration by a number of well-known investigators. The results of this work have recently been published.[1-5] Methods of manual artificial respiration fall into two main groups. The first consists of various procedures to compress the chest: release of this compression allows the chest to return to its original volume, and fresh air flows into the lungs as a result. The best-known of the "push" methods, as these are called, is Schafer's, which has been generally used for many years and has undoubtedly saved many lives. The subject lies prone, and pressure is applied to the region of the floating ribs (prone pressure). This causes a considerable upward movement of the viscera as well as some chest compression. What are termed "push–pull" methods form the second group. In these, alternating with chest compression, a manœuvre is carried out which increases the volume of the chest, creates a negative pressure, and draws air actively into the lungs. The best-known of the push–pull methods is that of Silvester, who originated it nearly a century ago. With the subject supine the push is applied by pressure on the front of the chest and the pull by lifting the arms upwards and above the head. The Nielsen technique, which has been used successfully in Scandinavia for 20 years, is carried out in the prone position with the arms bent and the hands under the head. The pull is supplied by elbow-lifting and the push by back pressure immediately below the scapulae. Another method of drawing air into the chest is by lifting the pelvis of the prone subject.[6] This allows the anterior abdominal wall to sag and creates a negative pressure in the body cavities: extension of the spine also increases the volume of the chest. This rather arduous manœuvre can be modified so that the patient's pelvis is rolled over against one thigh of the kneeling operator. When combined with back pressure these two methods are known as the hip-lifting–back-pressure method (H.L.B.P.) and the hip-rolling–back-pressure method (H.R.B.P.). In this series of investigations the Eve rocking method, which is essentially a push–pull manœuvre, was not investigated, since it requires added apparatus (except in children) and is not a strict manual method.

A team of workers at Illinois University studied the tidal air and ventilatory volumes in normal adult subjects who were anaesthetized and dosed with curare to the point of apnoea.[3] It was clearly shown that the push–pull methods all yielded two to three times the ventilation obtained by the Schafer method. The hip-lift–back-pressure method gave the greatest tidal excursion. It was also shown that back pressure just below the scapulae was 50% more effective than pressure lower down, as used in the Schafer method, and also more effective than pressure over the scapular region. Spirometric tracings showed that the chest did not return to its original size after Schafer compression and that all the ventilation was carried out within the expiratory reserve volume (reserve air). The various pull manœuvres, however, ventilated the inspiratory reserve (complemental air).

Comroe[3] studied the ventilation in patients with apnoea caused by intracranial lesions, and although the comparative value of the procedures was of the same order the absolute volumes ventilated were less than half of those reported in anaesthetized and curarized normal subjects. In some of these patients the tidal volume obtained by the Schafer method was considered to be less than the respiratory dead space. A comparative study of the arm-lift–back-pressure method (Nielsen) and the hip-lift–back-pressure method in female patients rendered apnoeic by anaesthesia before operation showed the considerable superiority of the H.L.B.P. method. The lung ventilation was still below that obtained in normal subjects, although these patients were on a table or litter and the operator was standing. These experiments clearly show that there is a poor ventilatory response to these procedures in ill people with respiratory failure, and that more emphasis should be laid on the very real risk of underventilation.

At Harvard University Gordon[3] investigated the circulatory state and blood oxygenation in 15 normal subjects who were anaesthetized and given curare. The response to 15-minute periods of prone pressure (Schafer), A.L.B.P. (Nielsen), H.L.B.P., and H.R.B.P. was studied. An indwelling arterial needle and a cardiac catheter in the pulmonary artery allowed the cardiac output to be determined. This was very variable, the mean value being on the high side of normal. The most important finding was that arterial blood samples at the 7th and 15th minutes showed near normal saturation with all three push–pull methods. However, in six of the nine subjects in which the Schafer method was used the mean arterial blood saturation was 67%, and in the other three the cyanosis was of such a severe order (i.e., 42%) that a push–pull method had to be used to avoid endanger-

[1] Gordon, A. S., Sadove, M. S., Raymon, F., and Ivy, A. C., *J. Amer. med. Ass.*, 1951, **147**, 1444.
[2] Ibid., 1951, **147**, 1454.
[3] *J. appl. Physiol.*, 1951, **4**, No. 6 (pp. 403–495).
[4] *Manual Artificial Respiration*, Chemical Corps, Army Chemical Centre, Maryland, Medical Laboratory Research Report No. 79, 1951.
[5] Dill, D. B., *U.S. armed Forces med. J.*, 1952, **3**, 171.
[6] Thompson, T. C., *J. Amer. med. Ass.*, 1935, **104**, 307.

ing the subject's life. In all these subjects the adoption of the push–pull method caused a reversion of the arterial blood saturation to near normal and safe values. Even more disturbing was the observation that in those subjects with dangerous cyanosis during artificial respiration by the Schafer method the minute volumes were normal (6–7 litres/minute). In view of the relatively normal cardiac output and ventilation it is probable that air ventilated by the Schafer method is poorly distributed throughout the lungs and that much of the blood from the heart passes through the lungs without being oxygenated. Whittenberger had already pointed out that such a state of affairs could be demonstrated in dogs when ventilation was carried out with reduced lung volumes. Studies by the Harvard and Illinois teams of workers showed that 12 push–pull cycles per minute was the most practical rhythm and achieved a highly efficient air flow.

Karpovich[3] studied the oxygen consumption of operators applying artificial respiration by these methods. As was to be expected, the Schafer method demanded least expenditure of energy and the hip-lifting methods the most. The Silvester and Nielsen methods occupied an intermediate position. The teaching of the push–pull methods was tried out among large groups of Servicemen, who had no difficulty in learning to perform them accurately. It was found, however, that the Silvester and Nielsen methods were easier to learn than the hip-lifting methods. The fatigue caused by the latter appeared to contribute to the loss of sustained efficiency.

As a result of these studies all the interested organizations, civil and military, in the United States have agreed that the Nielsen method (arm-lift and back-pressure) should be recommended for general use as soon as was practicable. It is easily taught, easily performed, gives far greater ventilatory volumes than any push method, and ensures adequate blood oxygenation. In contrast, the Schafer method gives far smaller ventilatory volumes, which may be dangerously low in ill and disabled subjects, and, further, the blood oxygenation may be seriously impaired even with normal ventilatory volumes. The Silvester method was carefully considered, but it was decided that the possibility of the air-way becoming blocked in the supine position was too great: this danger was confirmed by ventilatory studies in warm cadavers. A further recommendation was that medical and first-aid workers should be trained in all push–pull methods, since injury, pregnancy, or lack of room when an injured person is trapped may make a particular method mandatory. Comroe has laid great emphasis on the need for high ventilatory volumes, particularly in the first few minutes of treatment of persons with absolute respiratory failure and whose survival is gravely threatened by extreme anoxaemia and carbon dioxide retention. He suggested that a rhythm of 15 cycles per minute should be used and that expert first-aid workers would be well advised to employ the hip-lifting techniques if only for a limited period. There are good reasons to support this recommendation, since it is almost certain that the final issue between death and survival is decided in these first few minutes. Critical damage to the central nervous system and myocardium by anoxia in this early period may render prolonged artificial respiration pointless and ineffectual.

The organizers, investigators, and gallant subjects who took part in this work are to be congratulated on this sudden and enormous advance in the difficult subject of resuscitation. The evidence presented by all these American workers leaves no doubt that the almost general use of the Schafer method in this country should be immediately reconsidered. In fact, this is being done by all the authorities concerned, and the Royal Life Saving Society has recently stated that, since the Holger Nielsen method is much more effective than the Schafer method, the former should be learned and practised by all award holders and instructors. Elsewhere in this issue (p. 278) Dr. E. J. Gordon Wallace gives some practical advice which should be read with care by all who may have to give artificial respiration.

The general body of medical men in the past have not taken a very active and practical interest in this field, though there have been many notable exceptions. It is a reflection on the medical profession that some really skilled first-aid workers consider the official advice to "get a doctor" only appropriate when it is necessary to certify death.

PROGRESS IN DERMATOLOGY

The Tenth International Congress of Dermatology was opened in London last week by the Duke of Gloucester. It is 17 years since the last Congress took place—a delay brought about by wars and threats of wars—and 56 years since we had the honour of being hosts to our colleagues abroad. On that occasion the President was Sir Jonathan Hutchinson, whose name is remembered as that of a great dermatologist and a great syphilologist. No less aptly, the President this year is Sir Archibald Gray, whose work for dermatology in high councils in this country has been largely responsible for the secure position this

specialty now holds in the broad field of medicine in England. At the time of the last London Congress, in 1896, dermatology had been evolving out of surgery; in the last 50 years it has taken more from medicine. Sir Russell Brain, in an address at this year's opening ceremony, said that "it is not true that dermatology is only skin deep," and the main subjects for discussion—the treatment of tuberculosis of the skin, the use of A.C.T.H. and cortisone, and eczema—each exemplified this.

Since the last International Congress the treatment of tuberculosis of the skin has undergone a revolutionary change with the introduction of calciferol, which is likely to have a lasting place, particularly in the therapy of lupus vulgaris. Professor Charpy reviewed the results of 10 years' treatment, stressing the high rate of cure that can be obtained with carefully calculated long-term dosage; recent investigations by Drs. Dowling, McCrae, and Gauvain on the effect of high doses of this drug in reducing renal efficiency underlined its potential toxicity and the need of close control of the patient. However, heliotherapy and local measures still held a very important place in the control of this disease, and honour was paid to the late Dr. Lomholt, whose name will always be associated with that of Finsen for their great work in this field. How calciferol works is still not clear, but it seems likely that it enhances the specific response of the host's tissues to the tuberculous infection, rather than having any direct action on the bacillus itself. More recent remedies for tuberculosis offer hope of a yet more speedy control of lupus, but as yet none of these seem likely to supersede, though they may supplement, calciferol. The final control of tuberculosis of the skin will occur only with gradual elimination of sources of infection.

The effects of the new steroid hormones on skin diseases are dramatic rather than lasting. On progressive diseases such as scleroderma and dermatomyositis the effect is symptomatic and not curative; on acute disseminated lupus erythematosus it may tide the patient over a crisis but not over the disease; on pemphigus the results are not conclusive. Periods of natural remission in these diseases afford a trap for the enthusiast in therapy. In general these agents may be said to mask, and perhaps to buffer, the reactions of the host's tissues, and their main use may well be to mitigate the effects of these in diseases having a natural though destructive peak and a good eventual prognosis. Of importance also, as Dr. Sulzberger pointed out, is the use of these hormones as weapons of investigation into the mechanisms of skin pathology.

The problem of eczema is still with us. The final unveiling of the processes concerned in this particular pathological state of the skin may well have to await big advances in general pathology. Little by little, however, the curtain is being lifted, and the work of Professor Haxthausen and others has established the connexion between the immunity mechanisms involved and lymphocytes. A great deal of interesting work on enzyme systems in the skin and on the plasma proteins may elucidate some of the problems, but meanwhile, as Dr. Pillsbury stressed, the continually increasing number of chemical compounds met with in everyday life provides more and more chances of skin sensitization. It is important to separate the known facts about these mechanisms from the vast amount of hypothesis and legend, and one should mention in this respect a short paper by Drs. Baer, Serri, and Kirman, who reported an elegant and wholly negative attempt at passive transfer of sensitized white cells. In this subject a single negative experiment is often worth many doubtfully positive ones. Professor Gaté pointed out that "a morbid predisposition of the terrain" was still the most important factor. It seems likely that eczema may represent the common expression of a number of different pathological entities, but the final solution is nowhere yet in sight.

In the day-to-day individual practice of dermatology it is sometimes forgotten how much work is in progress throughout the world in attacking those diseases whose victims are numbered in hundreds of thousands, particularly in Africa and Asia. The development of schemes by W.H.O., Unicef, the British Empire Leprosy Relief Association, and similar bodies is now beginning to show cumulative results. The introduction of the sulphones has opened up new possibilities in the mass control of leprosy, and there has been a considerable advance in knowledge of the disease in the last 10 years. The skin is now recognized to be the site of entry of the organism. In the treponemal diseases penicillin has made campaigns of mass-eradication possible. Though syphilis itself has to a great extent become divorced from dermatology in this country, its importance to all dermatologists remains, and the Congress provided an opportunity for the comparison of the results of various techniques of penicillin therapy. Of particular interest was the work done with electron-microscopy on the life-cycle of the spirochaete, and the demonstration of the formation of "gemmae," possibly an alternative mode of reproduction, is already throwing light on such obscure problems of syphilis as latency.

Over 200 papers were read at the Congress, and among the other subjects discussed was the work of Drs. Fitzpatrick and Lerner on melanogenesis, using labelled tyrosine, and on the use of psoralens (plant extracts) in the treatment of vitiligo. Experimental work by Dr. Anderson on the *p*H of the skin stressed the importance of this defence mechanism. In skin cancer an interesting possibility of the combination of ultrasonic radiation with radiotherapy was opened up, but it is too early to gauge the effect of this; the separation of the "molluscum sebaceum" (or keratoacanthoma) from epithelioma of the skin is of importance in treatment and statistics. The classification of the reticuloses is still in a state of flux. The value of cytodiagnosis, especially in the bullous group of diseases, is now established, and provided the subject of one of the many beautifully prepared demonstrations. Indeed, the wealth and variety of experimental work was shown to the greatest advantage in the museum, which included a demonstration by electron microscopy of normal and abnormal collagen fibres and changes which may occur in the amorphous ground substance.

ALCOHOL AND ROAD SAFETY

The number of people killed on the roads of Great Britain continues to rise. Less than 1% of accidents involving personal injury are, however, attributed by the police to drink or drugs. Yet in Sweden 44% of patients admitted to one surgical ward after traffic accidents were said to have been drinking. Some of the reasons for these discrepant figures were made clear in a most instructive lecture given to the Society for the Study of Addiction by Professor Goldberg, of Stockholm University, on July 15.

In this country the evidence that a motorist is "under the influence of drink or a drug to such an extent as to be incapable of proper control of a vehicle" is based primarily on a clinical examination. The estimation of the quantity of alcohol in the blood or urine is not always available, and, when it is, serves chiefly as evidence of the minimum amount of alcohol consumed and not as evidence of intoxication. It is doubtful if a conviction is ever obtained in persons with a blood alcohol below 0.15%—a level which may result from the rapid consumption of 8 oz. (225 ml.) of whisky or 4–5 pints (2½–2¾ litres) of beer. In Sweden, on the other hand, where the law is much more strict, estimations of the amount of alcohol present in the blood are the decisive factor in determining a conviction. If the blood alcohol is greater than 0.15% a driver, whether involved in an accident or not, is imprisoned, and if greater than 0.08% he is fined.

Professor Goldberg has made extensive observations on the blood levels obtained after the consumption of alcohol in different forms and in different circumstances. Comparison of beer and spirits shows that a given quantity of alcohol taken as beer leads to a lower maximum blood alcohol level than if it is taken as spirits, and the alcohol disappears more rapidly from the blood stream. The blood alcohol rises less when food is taken along with spirits, but not when it is taken with beer. After drinking relatively small amounts of alcohol—e.g., 100 to 130 ml. (3½ to 4½ oz.) of spirits—the blood alcohol level is usually less than 0.06%. The deleterious effects of these quite low levels on performance can be demonstrated both in the laboratory and in road tests. Expert drivers showed significant deterioration in their ability to perform a series of practical tests when compared with a control group which had taken no alcohol, and in the laboratory the "flicker" test and "blink" test showed similar impairment in the same subjects.

Professor Goldberg described a series of observations in which seven different physicians examined 700 cases thought to be under the influence of alcohol, and in which blood alcohol estimations were also carried out. Very wide variations in clinical opinion existed. One physician judged 50% of the cases to be intoxicated when the blood alcohol level was only 0.03%, whereas the most lenient observer placed the 50% intoxication level at 0.14%. Those who have become habituated to alcohol differ from the occasional drinker chiefly in a lessened sensitivity of the nervous system, so that at a given blood level they show fewer symptoms, but Professor Goldberg pointed out that in practice a heavy drinker almost invariably drinks so much more than a normal person that he actually becomes more intoxicated than the occasional drinker.

It is improbable that the law will be changed in Britain and that estimations of blood alcohol will take precedence over the clinical judgment of the examining physician. In a House of Commons debate on June 20 both Government and Opposition speakers agreed that such blood tests should not be made compulsory, because they were thought not to be infallible, but it was suggested that motorists should be able to ask for tests if they so desired.[1] It seems clear that if Professor Goldberg's findings are accepted we are perhaps unduly generous to the intoxicated motorist, and that estimations of blood alcohol might with advantage be considered along with the clinical findings in arriving at a decision. It is also very probable that the capacity to drive a car safely is impaired by quantities of alcohol well below those which lead to behaviour so erratic that it attracts the attention of the police.

SURVEY OF MORBIDITY

The extensive field of general practice lends itself to the making of a broad survey of the incidence of disease and study of its relationship to such factors as age, sex, and occupation. It is a commonplace that the young doctor on leaving hospital is apt to read sinister interpretations into signs of minor disease. This is inevitable, because hospitals cannot cater for minor, transient ailments, nor would it be desirable that such cases

[1] *British Medical Journal*, 1952, **1**, 1413.

should be admitted, even were the space available. It follows, therefore, that a correct perspective, a true appraisal of the balance of disease, is confined to the experienced general practitioner. Unfortunately he is usually too overburdened with work, in a practice lacking secretarial assistance and organized note-keeping, to be able to collect the harvest of knowledge which lies around him.

Facing these difficulties, Dr. John Fry has published, elsewhere in this issue, an informative and interesting report on his single-handed practice in the south-east outskirts of London. His survey is for the year 1951, and its object to look into the causes of ill-health and to determine the conditions most often encountered in general practice. A concise picture of his field of work reveals that the area of the practice is approximately 4 square miles; the yearly mileage 14,000; the number of patients at risk approximately 4,500, with slightly more females than males. Nearly all are attended under the N.H.S. Sessions in the consulting-room last two hours, during which time 25 patients are seen—an average of five minutes per person. Here, then, lies the first major risk, for such speed calls for experience and judgment to weed out the really ill—these are given special appointments—and those who have little or nothing amiss. Clearly quick decisions must be made, and the responsibility of ensuring that they are the right decisions is a heavy one for doctors with lists of this size.

The average number of daily visits is surprisingly low—viz., 10—each lasting 10 to 15 minutes. This time is adequate, for the patient will usually be in bed, and precious minutes will not be lost by the process of undressing. In no fewer than one in seven consultations the issue of some form of certificate is called for. This fact supports a widely held impression that certification is becoming an intolerable burden, and that it interferes with professional work.

Dr. Fry, for the purposes of his survey, accepts as the criterion of morbidity the seeking of medical advice, apart from special examinations for insurance or emigration. As a rough guide this works quite well, but it would clearly detract from any attempt at statistical analysis of the prevalence of ill-health, because it would include the work-shy and the malingerer. It is in fact astonishing to read that the average number of attendances per person per year is 3.28. How interesting it would be to have a similar survey of private practice.

A broad grouping is used for the classification of diseases—e.g., respiratory, digestive, etc.—and their relationship to the sex of the patients is set out. The only significant difference is seen in neuroses with a male : female ratio of 0.5 : 1. The fact that rheumatic diseases here include the ill-defined forms of "chronic rheumatism" must be borne in mind in assessing the importance of this group, for it may be swollen by the inclusion of neurotics, malingerers, and the tired, whose aches and pains may be attributed to fibrositis.

Dr. Fry has shown what can be done in a busy practice, and deserves all praise. Let us hope that others will follow his example.

EMPLOYMENT FOR DISABLED YOUTH

The purpose of a recent investigation[1] in Glasgow was to discover to what extent disabled young people are unable to earn a living, what kinds of disability interfere most seriously with their capacity to work, how far social and environmental factors contribute to their difficulties, and what should be done to help them. The work was sponsored by the Occupational Medicine Committee of the Medical Research Council. The report is about 579 young people, of whom 104 were found to be unemployed, 32 of them having never worked since they were registered as disabled prior to July 1, 1948. In about 20% of the cases the disability was some form of tuberculosis; in a similar proportion mental conditions or diseases of the nervous system; and in 16% diseases of the eye or ear. Unemployment was substantially greater in the groups disabled by tuberculosis and by mental defect. On the other hand, those disabled as a result of congenital malformations and diseases of the ear and of bone all showed low unemployment rates. The employment record of those disabled as a result of poliomyelitis, numbering 34 out of the 579, was one of the best, probably because the disability is not progressive, seldom afflicts more than one member of the family, and does not often entail the loss of many years' schooling. Moreover, there is a belief, which this study somewhat bears out, that the character of the poliomyelitis victim tends to be robust and free from self-pity. The deaf also had a good record, largely owing to the excellent resettlement work of a voluntary body in Glasgow (the Outdoor Mission to the Deaf).

The authors recommend four lines of action in Glasgow. The first is the mitigation of the gross educational lack which adds to the difficulties of so many of these young disabled people. The second is the adoption of a positive plan to secure a satisfactory settlement in employment before the young person begins to drift; the ideal time for successful settlement is on leaving school. The report, in the third place, calls for a large increase in training courses for disabled young people. Finally, medical and surgical treatment must be available, where necessary, together with the provision of any required medical aids or surgical appliances. Many of the disabled young people are said still to lack this help even to-day. Effective treatment can do much to lighten the disability of some of these young people, and so finely is their economic future poised that even a slight measure of improvement may be of great practical importance.

DANCKWERTS AWARD THROUGH PARLIAMENT

The Civil Estimate for the Danckwerts award has been passed by Parliament without debate. There is nothing further to prevent its payment in full to the profession.

[1] Ferguson, T., Macphail, A. N., and McVean, M. I., *Employment Problems of Disabled Youth in Glasgow*, Medical Research Council Memorandum, No. 28, 1952, H.M.S.O., London.

REFRESHER COURSE FOR GENERAL PRACTITIONERS

RESUSCITATION OF THE APPARENTLY DROWNED

BY

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Members of first-aid classes are often told—with a great deal of justification—that, apart from the immediate control of severe bleeding, artificial respiration is the one really life-saving procedure which a trained layman can carry out as effectively as a qualified medical practitioner.

What, then, are the practical problems of the doctor called to the apparently drowned body on the beach or river-bank? Where does he start, and what method of artificial respiration is he to use? Mechanical means for performing artificial respiration cannot be expected to be immediately at hand in such an emergency, in which it has been well said that "seconds count." The first essential, therefore, is that every doctor should be thoroughly proficient in carrying out manual artificial respiration, so that he can either perform it himself or supervise its efficiency when carried out by others.

Asphyxia caused by drowning is due to immersion of the mouth and nostrils in water, thus preventing the passage of air to and from the lungs. The immediate effects of such obstructive asphyxia are depletion of oxygen and retention of carbon dioxide. Workers in Canada have shown that the oxygen saturation of arterial blood drops to approximately 15 volumes % during the first few minutes after submersion, falls to between 2 and 3 volumes % by the end of six minutes, and is almost at zero within seven to eight minutes. The aim of artificial respiration is to re-establish the flow of air through the lungs as quickly as possible so that oxygen may be carried to the brain and vital centres before these suffer irreversible damage. Various procedures have been elaborated to secure this.

Efficiency of Different Methods of Artificial Respiration

In this country Schafer's method has been most widely taught, and in practice it has saved many lives. Recent experimental work in America, however, would appear to indicate clearly that other methods are more efficient, particularly in inducing active inspiration—a process which in Schafer's method depends on the recoil of the diaphragm after release of positive pressure applied to the small of the back. It is now appreciated that in an asphyxiated person there is a rapid loss of muscle tone, and the amount of air passively inspired in Schafer's method is much less than in the more modern procedures. At the University of Illinois research work has been conducted under conditions which approximated as closely as possible to actual asphyxia in that the experimental subjects were healthy adult males in whom total apnoea was induced by intravenous thiopentone and curare. It was thus possible to evaluate the efficiency of the various artificial respiration procedures without the inevitable variations which must be expected when conscious subjects are used; the different methods were all carried out by the same operator. Not only were tidal air volumes measured but samples of blood were taken by arterial catheters for estimation of oxygen saturation. Tidal ventilation achieved by the various methods was as follows:

Schafer	485 ml.
Arm-lift–chest-pressure (Silvester)	1,069 ml.
Arm-lift–back-pressure (Holger Nielsen) ..	1,056 ml.

With the arm-lift–back-pressure (Holger Nielsen) method blood oxygen levels remained at about 90% saturation, while with Schafer's method a dangerous degree of cyanosis developed in several instances. The Silvester method suffers from the disadvantage that the operator requires an assistant to hold forward the patient's flaccid tongue, which would otherwise fall back and block the oropharynx, while in an apparently drowned person the face-upward position does not facilitate the flow of water from the respiratory passages.

As a practical procedure the Holger Nielsen method can be easily carried out even by persons of frail physique. It can be quickly taught and effectively performed by first-aid students. This arm-lift–back-pressure method has therefore been endorsed by the American Medical Association, the American Armed Forces, the National Red Cross, and many other responsible organizations in the U.S.A. for use by the general public when dealing with cases of asphyxia. There would seem to be no reason, therefore, why the Holger Nielsen method should not be adopted in this country as the method of choice for carrying out manual artificial respiration.

Arm-lift–Back-pressure Method (Holger Nielsen)

The arm-lift–back-pressure method is essentially the same as the Holger Nielsen method, which has given highly satisfactory results in Scandinavian countries over the past 20 years. This method is therefore described first, but it must be remembered that before artificial respiration is started it is necessary to get rid of as much water as possible from the air passages. To do this, place the casualty prone, with his face down and head on one side. The doctor stands astride the casualty, across the thighs, stoops down, and clasps his hands under the patient's lower abdomen and raises the body, which is kept raised so long as water flows out. It is important to ensure too that the oropharynx is not obstructed by dentures or foreign bodies.

Artificial respiration is then carried out as follows: (1) Place the patient prone—that is, in the face-downward position—the arms overhead, and elbows flexed so that one hand rests on the other (Fig. 1, A). (2) Turn the patient's head to one side, so that the cheek rests on the uppermost hand. (3) Kneel on one knee at patient's head and put the foot of your opposite leg near his elbow. (4) Grasp the patient's arms just above his elbows and rock backwards, raising his arms until resistance and tension are felt at the patient's shoulders (Fig. 1, B). (5) Drop patient's arms, place your hands on his back just below the scapulae, and rock forward with your elbows straight, until your arms are approximately vertical, exerting steady pressure on his chest (Fig. 1, C and D).

The phases of expansion and compression should each last 2½ seconds, the complete cycle being repeated 12 times a minute. No time should be lost between the two phases of expansion and compression.

This method is, of course, only practicable when there are no gross injuries to the arms, shoulder-girdle, and ribs. Should such injuries be thought to contraindicate the Holger Nielsen method it is advisable to start Schafer's method (for which see the textbooks of the St. John Ambulance Association or British Red Cross Society) at once and send for a rocking stretcher apparatus. Indeed, Eve's rocking method is thought to be so much more effective than manual methods that the necessary apparatus should be immediately available at every ambulance station.

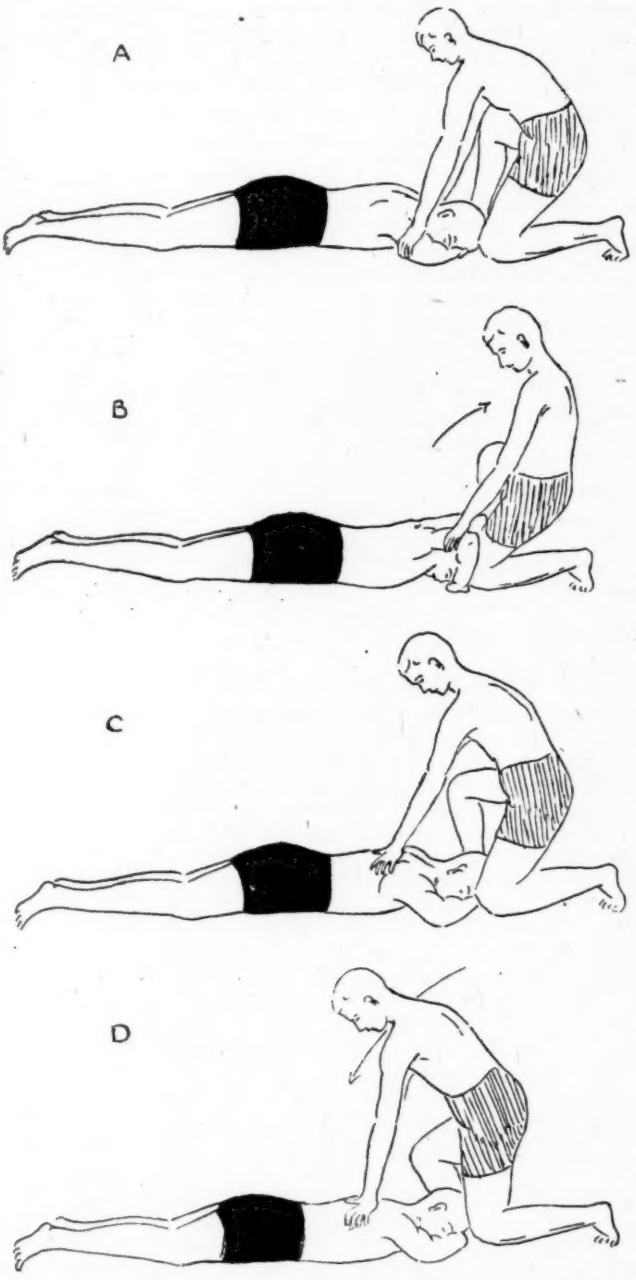


FIG. 1.—Arm-lift–back-pressure method of manual artificial respiration (after Holger Nielsen). A, placing hands for arm lift; B, arm lift; C, placing hands for back pressure; D, back pressure. (After Fig. 3 in an article entitled "Critical survey of manual artificial respiration," by A. S. Gordon, M. S. Sadove, F. Raymon, and A. C. Ivy, in the *Journal of the American Medical Association*, 1951, **147**, 1444, by kind permission.)

Eve's Rocking Method

This method, evolved by Dr. F. C. Eve, of Hull, was proved to be most efficient during the last war and has been officially adopted for use in H.M. ships. Essentially it relies on a piston-like movement of the diaphragm when the body is rocked in a see-saw fashion, through an angle of 90 degrees. The apparatus consists of a trestle 34 in. (86 cm.) high, with a strong horizontal bar (preferably a ¾-in. (1.9-cm.) metal rod) and a stretcher with **W**-shaped metal pivots permanently fixed below the centre points of both side-poles (Fig. 2). These notched metal pivots, which should be just shorter than the stretcher runners, prevent the patient's abdomen from sagging on to the trestle cross-bar, as well as eliminating any sliding of the stretcher on the crossbar while rocking is being carried out. Should such a prepared stretcher and trestle not be available, this sliding can be prevented by hammering two strong nails into the underside of each stretcher pole, the distance between each two nails being governed by the width of the improvised "trestle" to be used. The Riley rocking stretcher made by Siebe, Gorman & Co., Ltd., has been specially designed to enable Eve's method to be carried out easily and effectively.

FIG. 2.—Apparatus for Eve's rocking-method, during expiration. (From *First Aid in the Royal Navy*, by kind permission of the Controller, H.M. Stationery Office.)

Manual artificial respiration (preferably the Holger Nielsen method) must be carried out until the rocker stretcher is brought up alongside the patient and continued after he has been smartly lifted on to the stretcher bed (prone position) until his wrists and ankles have been secured to the stretcher handles by means of appropriate bandages. (With the Riley rocking stretcher a special harness is used.) The stretcher is then quickly lifted on to the trestle, and rocking is begun with a head-down tilt (to ensure that water has been eliminated from the respiratory passages). Alternate head down and feet down "see-saw" rocking movements are continued at a rate of approximately nine double rocks a minute—four seconds head down and three seconds feet down. Each movement should start abruptly so as to ensure that the abdominal viscera begin to move early in each "rocking."

Administration of Oxygen

In the past it has been thought that carbon dioxide acts invariably as a stimulant of the respiratory centre, but it is now believed to be dangerous to give it, even mixed with oxygen, to anyone who has been asphyxiated. Carbon dioxide should therefore never be used in treating cases of drowning, and the administration of pure oxygen should be begun as soon as possible. This is best done by means of a Novox resuscitation apparatus, which should be available at all main ambulance or fire stations. Before using it a check should be made to ensure that the cylinder contains pure oxygen (white neck) and *not* a mixture of oxygen and carbon dioxide (green and white neckbands*). The by-pass valve should be opened carefully so that the flexible breathing-bag is not over-inflated, as this merely wastes oxygen.

The initiation of efficient artificial respiration and the administration of pure oxygen are thus the two procedures which must be begun without delay in the resuscitation of an apparently drowned person. Attention, too, must be directed to overcoming the shocked condition of the patient by removing wet clothing, drying him, covering him with blankets, groundsheets, or mackintoshes to prevent further heat loss, and by applying protected hot-water bottles, particularly to the nape of the neck. These steps, while important, must not be allowed to interfere with the continuous performance of artificial respiration. This must be kept up, by relays of helpers, for at least two hours, or until natural respiration begins, when the operator must synchronize his

*This is now being changed to white and grey.

movements with the patient's breathing, gradually reducing his efforts as natural respiration becomes stronger.

Stethoscopic auscultation over the trachea may give an indication that spontaneous breathing has begun, but the best indication of this is probably given by the Novox apparatus, the flexible breathing-bag of which—with the by-pass valve slightly opened—will show faint movements with shallow spontaneous respirations. However, it is not recommended that artificial respiration should be momentarily suspended—so that this movement may be looked for—until it has been carried out for at least 15 minutes.

When spontaneous breathing is confirmed the Novox by-pass valve may be closed, as the patient will then inhale an appropriate amount of oxygen by means of the automatic "lung-governed" mechanism. The air-admission valve under the Novox facepiece may then be opened gradually so that the patient breathes in progressively more atmospheric air and less pure oxygen.

When normal breathing and consciousness have returned the patient must be carefully watched, so that should his respiratory efforts again become feeble resuscitation measures may be resumed. On no account must the patient be allowed to sit up. A few sips of a warm drink may be given, and he should be removed—lying on his side on a stretcher—preferably to hospital, where observation can be kept for possible pulmonary sequelae.

Finally, with artificial respiration, as with all other practical procedures, it cannot be too strongly emphasized that practice makes perfect.

Next Refresher Course Article.—"Anaesthetic Explosions," by Dr. C. F. Hadfield.

MEDICAL BENEVOLENCE

The annual meeting of the Royal Medical Benevolent Fund was held on July 24 under the presidency of Lord Webb-Johnson, whose first announcement was that Her Majesty the Queen had graciously consented to be patron of the Fund. Lord Webb-Johnson, Mr. F. A. Juler, and Dr. R. Cove-Smith were re-elected respectively president, honorary treasurer, and honorary secretary.

£36,522 Distributed

In presenting the annual report, Dr. Cove-Smith said that the capital funds and reserve amounted to £435,900, the investment income for 1951 to £13,794, and the subscription income to £24,410. The amount distributed during the year in the form of grants, annuities, and Christmas and New Year gifts was £36,522, and the administration expenses were at the very economical level of 6.6%. An excess of expenditure over income of £4,859 was not a matter for serious anxiety in view of the substantial reserves, but if more members of the profession could be induced to subscribe the Fund could extend the scope of its benefits and would no longer have to work on such narrow margins. Some generous benefactions during the year included £500 from Lord Webb-Johnson on his re-election as president. The most outstanding source of financial support was the Medical Insurance Agency, which added £10,892 to the subscription income during the year. The Charities Committee of the British Medical Association was able to hand over £3,500 from earmarked and £2,197 from non-earmarked donations. The amount received in legacies—£18,114—was considerably less than in the previous year, but well up to the average. During the year 88 new applicants had been helped, many of them widows with young children to educate and maintain, and many others elderly and infirm, and the total number of beneficiaries on the books was over 600. Dr. Cove-Smith urged the value of the seven-year covenant scheme, which ensured a regular annual income to the Fund and enabled some tax to be recovered by the Fund and put to good use without further cost to the subscriber.

Distinction Awards Received

Lord Webb-Johnson said that while £24,410 might seem to be a handsome subscription income it had to be set against the numbers in the profession, making it evident that a large proportion of medical practitioners never subscribed to the Fund. He referred with special praise to the generosity of a number of practitioners who had handed over to the Fund the amount of their "distinction award." In spite of the National Health Service and the greater dependability of the doctor's remuneration, there were still many hard cases. Medicine was a hazardous profession, and many practitioners died in the earlier part of their career before they had been able to make sufficient provision for their families. He suggested that the opportunity of Coronation year might be taken to make a wider appeal than usual, backed by various medical organizations. It was the solemn duty of members of the profession to subscribe up to their capacity and encourage others to do so.

LORD BOYD-ORR ON WORLD HUNGER

Lord Boyd-Orr was unanimously elected president of the Central Council for Health Education at the annual meeting held at B.M.A. House on July 24. In a brief address he referred to the value of the council in this country, and of the World Health Organization and other bodies in the international field, in informing and educating the public in the matters of health and nutrition.

Food Supply and Social Contentment

During the war a rationing and food subsidy system had been built up which ensured their proper share of available food supplies to the poorer as well as the richer members of the community, and above all aimed at preserving the health and nutrition of the rising generation. The question was whether that policy could be maintained and developed. Food supply bore a close relation to social contentment. Lord Boyd-Orr spoke of the "hungry forties" of the last century, the period just before the repeal of the Corn Laws, when the high price of foodstuff led to social unrest. During the half-century from 1800 to 1850 the population of this country rose from 10 million to 20 million, but there was no corresponding increase in food production. Half a century later, thanks to the opening up of vast areas overseas, the position was very different, but now food scarcity was again asserting itself. The population of this country at present stood at some 49 million, but the population of the rest of the world was increasing at an ever accelerating rate, and food production was not keeping pace. There was now less food per head of population than in 1938. World hunger was apparent, and, unless the efforts of United Nations could cope with the situation, would become acute. In this country, up to now so favoured, unless there was a big increase in home food production a severe pinch would be felt, for we still had to import half the food we consumed, and in a hungry world such importation became more and more difficult. The problem of shortage of food in Asia was now our problem. The world had become so small that the problems of any country now concerned all countries. Countries which used to send food to us were now actually themselves importing food and competing with us in the world's markets.

Sir Allen Daley, who, together with Dr. Charles Hill, M.P., was elected a vice-president of the Central Council, also addressed the meeting.

Reports of Societies

THIRTEENTH BRITISH CONGRESS OF OBSTETRICS AND GYNAECOLOGY

The thirteenth British Congress of Obstetrics and Gynaecology, which was held at Leeds from July 8 to 11, was opened by Dame HILDA LLOYD, president of the Royal College of Obstetricians and Gynaecologists. The four main discussions were on abnormal uterine action, the place of the paediatrician, stress incontinence, and genital tuberculosis.

Abnormal Uterine Action

After a guest paper by Professor M. A. VAN BOUWDIJK BASTIAANSE (Holland) on cancer of the body of the uterus the remainder of the first day was given over to the discussion on abnormal uterine action during labour. Professor G. H. BELL (Dundee), referring to the many ingenious devices for recording uterine contractions, said that fortunately recent work had shown a satisfactory correlation between internal and external tocography. There were, however, important differences between the reactions of the uteri of different species to pituitary hormones and between the *in vivo* and *in vitro* responses. Great caution was therefore necessary in making any inferences about the action of drugs on the human uterus from such data.

Professor W. C. W. NIXON attempted to evaluate some of the factors concerned in long labour; he stressed its increased likelihood with advancing age, in patients of low fertility, when the occiput is posterior, and sometimes with an unfavourable type of cervix—especially with the sacral position of the os.

Professors R. CALDEYRO-BARCIA and H. ALVAREZ (Montevideo) showed slides of tocographic records taken from different parts of the uterus during labour—the fundus, lower uterine segment, cervix, and the amniotic cavity. These speakers showed examples of the type of hypertonic disordered uterine action resulting from raising the resting tonus of the uterus from the normal 8 to 12 mm. Hg to over 30 mm. Other examples of incoordinate action showed the cervix contracting before the body of the uterus and the two sides of the fundus contracting alternately. Dr. E. A. WILLIAMS (Oxford), using a polythene tube in the amniotic cavity to record uterine activity, had been unable to show any increase in amniotic pressure between contractions in these supposedly hypertonic cases. In the low-tone type of inertia he had had good results from the pitocin-drip method of treatment; other speakers also reported good results with this method.

Cervical Spasm

There was some discussion on the value of dihydroergotamine in relaxing the cervix in cases of cervical spasm. Dr. JEAN HALLUM (Birmingham) and Dr. K. S. RICHARDSON (Sydney) reported good results with the drug. On the other hand, Professor T. N. A. JEFFCOATE (Liverpool) demonstrated tocographic records showing cervical contraction after administration of the drug. Professor J. CHASSAR MOIR (Oxford) summed up by saying that the safety of this method of treatment was not yet established, and he warned against its widespread use until more was known about the drug's action.

On the second day Professor W. GAISFORD (Manchester) and Mr. F. STABLER (Newcastle-upon-Tyne) opened a discussion on the place of the paediatrician in a maternity unit. It was generally agreed that paediatricians and obstetricians should, and did, work in harmony, and that the paediatrician had a very definite place in any efficient maternity unit without his exact duties requiring to be strictly defined.

Stress Incontinence

Perhaps the most useful day of the Congress was that devoted to the subject of stress incontinence of urine. Dr. ALBERT H. ALDRIDGE (New York) emphasized the importance of infection in aggravating the symptoms of apparent stress incontinence. Most cases could be treated satisfactorily by a vaginal plastic procedure; relatively few required the more elaborate sling operations. Of the latter Dr. Aldridge considered those carried out from both above and below to be the safest, as there was less chance of urethral damage, and also it was possible to place the sling accurately.

Professor T. N. A. JEFFCOATE and Dr. H. ROBERTS (Liverpool) threw considerable light on the problem by a remarkable series of lateral *x*-ray pictures. Normally there is a sharp angle between the urethra and the bladder base posteriorly; but during micturition the angle is obliterated. In cases of prolapse without stress incontinence, although the bladder neck might descend considerably, this posterior urethro-vesical angle was constantly present. In patients suffering from stress incontinence no such angle could be demonstrated. Professor Jeffcoate emphasized that it was neither descent of the bladder neck nor apparent funnelling in this region which was the important factor, but the absence of the posterior vesico-urethral angle; this was a constant finding in patients with stress incontinence of urine. Any successful operation for this condition could be shown to have had the effect of re-establishing this posterior angle when a subsequent *x*-ray picture was taken.

A number of different modifications of the sling operation were described by Mr. W. R. SLOAN (Bangor, Northern Ireland), Professor E. BRACHT (Berlin), and other speakers. Mr. J. H. MULVANY (Purley) said that in his opinion the common successful factor in all these operations was the freeing of adhesions in the region of the bladder neck, thus permitting more efficient muscular control. The operation which he had practised for some years with good results had been the thorough division of such adhesions. Mr. J. A. CHALMERS (Worcester) and Professor G. G. LENNON (Bristol) reported similar success with this type of urethrolysis.

Genital Tuberculosis

On the last morning of the Congress the problem of genital tuberculosis in the female was discussed. Dr. MAGNUS HAINES (London) described the pathological aspects of this condition. He referred to the superiority of guinea-pig inoculation over other methods in diagnosis. Infection was almost invariably due to the human form of bacillus.

Mr. JOHN STALLWORTHY (Oxford) discussed the clinical aspects both before and since the advent of antibiotic drugs. The most frequent complaint of patients was infertility. In 50% menstruation was normal; if it were not, menorrhagia was the commonest abnormality. He laid emphasis on the importance of a family or personal history of tuberculosis, which could be obtained in 20% of patients. Help in diagnosis could be obtained also by insufflation of the tubes, salpingography, and curettage, which should, if possible, be performed in the week preceding menstruation. From the standpoint of treatment, he maintained that cures from sanatorium regime in the absence of antibiotic treatment were small in number. Many cases relapsed, and these he had treated successfully by radical surgery. Since the advent of streptomycin and P.A.S. (*para*-aminosalicylic acid) encouraging results had been obtained, and it was found necessary to resort to surgery less frequently. Dr. A. M. SUTHERLAND (Glasgow) also described good results from this form of antibiotic treatment. Work at present was going on with the nicotinic acid derivatives, but it was too early to make any pronouncement about them. Other speakers included Dr. A. SHARMAN (Glasgow), Dr. R. G. CROSS (Dublin), and Dr. A. NETTER (Paris). Miss M. MOORE WHITE (London) and Dr. CROSS referred to the help kymographic tracings might be in the diagnosis of the condition. Dr. E. RABAU (Tel-Aviv) reported good results from streptomycin treatment, 100 to 120 g. of the drug being needed before cure was obtained. In one case of proved genital tuberculosis treated successfully with streptomycin there had been a subsequent pregnancy, but miscarriage had occurred at three months.

CONFERENCE ON FERTILITY

The third annual Conference on Fertility was held by the Society for the Study of Fertility in London on June 27 and 28. Dr. A. S. PARKES, the chairman of the Society, presided.

Germ-plasm Defects

Dr. CARL G. HARTMAN (U.S.A.) presented formidable evidence for the germ-plasm defect theory as a major cause of foetal wastage. His early studies on the opossum, which is aplacental, and in which he found some 10% of all the developing eggs to be grossly faulty, led him to favour the view put forward by Streeter—that early death of the embryo was due mainly to defective germ plasm, rather than the older idea of Mall that implantational defects were chiefly responsible. Later studies on mouse eggs, using intravital staining techniques, supported the same view by demonstrating in many instances dead and living blastomeres within the same zygote. He referred also to the recent studies by Hertig and Rock of early human ova; in none of the cases wherein these were abnormal did the authors find any evidence of endometrial deficiencies, although Dr. Hartman admitted that Hughes has claimed that a lack of a glycogen could be demonstrated in the endometrium in some cases of early abortion.

Intelligence and Fertility

Professor S. A. ASDELL (U.S.A.) gave a provocative contribution on the effect of intelligence upon fertility, basing his conclusions on a study of the pedigrees of royal houses. Although the assessment of intelligence was made as objective as possible, he admitted the possibility of many sources of error. Nevertheless, with the exception of genius, which seems to make its own laws, definite correlations appeared to exist, many of which were contrary to popular beliefs. Thus, although the incidence of inbreeding decreased with rising intelligence, the proportion of childless marriages was highest with least intelligence and smallest with average intelligence, and the number of children in the family was highest with average intelligence. It seemed that Nature favoured the average in intelligence, as in most other biological attributes. Another finding was that, contrary to Galton's view, the families of only children of high intelligence (judges who had been elevated to the peerage in Stuart and Georgian times) tended to be large, averaging five to six offspring. This paper evoked a lively discussion.

Professor S. ZUCKERMAN (Birmingham) reviewed the cellular components of the ovary, particularly from the point of view of their plasticity. He referred to his own recent work which led him to conclude that in the rat, at least, no formation of new oocytes from the germinal epithelium occurs in the adult. The function of the germinal epithelium was mainly protective; it was highly phagocytic and resilient, continually changing in size and shape as follicles matured and corpora lutea developed and regressed. The other highly plastic element of the ovary was the theca interna cell, which transforms from a fibroblastic cell into an epithelioid secreting cell, luteinizes to become—very likely—the only functional endocrine element of the corpus luteum, and finally can transform back into a fibroblastic structure.

Dr. BETHEL SOLOMONS (Dublin) made a plea for reconsidering the place of operations on the cervix in the treatment of infertility, believing that the pendulum had swung too far in favour of the cautery. He considered that deep-seated erosions were much better treated by the Schröder type of operation than by the cautery, that ectropion in multiparae should be treated by trachelorrhapy and that the Sturmdorf operation should be used on selected prolapse cases. He favoured nylon as a suture material for these operations, which, he felt, had another strong claim in that they helped to keep down the incidence of carcinoma of the cervix.

Vaso-epididymostomy for Azoospermia

Dr. HENRI BAYLE (Paris) demonstrated his film showing the operative technique of vaso-epididymostomy; the beauty and lucidity of this film are beyond description. Dr. Bayle does not perform testicular biopsy first, but prefers to incise the head of the epididymis after having mobilized the testicle; if moving spermatozoa are seen in the epididymal fluid, he proceeds with the operation, provided patency of the vas deferens can be demonstrated. He uses seven sutures of fine tantalum wire to anastomose the vas to the epididymis. Delicacy of touch and the avoidance of trauma are the prime requisites for success in this difficult operation. Out of 143 cases explored surgically, anastomosis was found impossible in 30 cases, and in a further six congenital absence of the vas was discovered. Vaso-epididymostomy was performed bilaterally in 60 cases, and unilaterally in 45; in a further four cases anastomosis of the vas deferens direct to the testicles was attempted. Of 65 surgically satisfactory cases the azoospermia was cured in 45 (66%), 20 of these men producing in all 32 children. This success rate, of course, is far better than any other surgeon has achieved.

Antibiotics and Cervical Block

Dr. MARY BARTON (London) had found chloramphenicol and aureomycin of great value in dealing with cervical block where sulphonamides and penicillin had failed to clear the cervical mucus of leucocytes. These antibiotics succeeded where pathogens sensitive to the drugs had been cultured from the mucus, and, moreover, also in cases where no pathogens had been recovered. In these latter cases it was possible that viruses might be responsible for the apparent cervical infection. Oral treatment was more effective than vaginal insufflation, and an average dose was 2 g. daily for six days. Side-effects were rather common, but could be reduced in severity by the simultaneous administration of large doses of vitamin-B complex.

Seminal Analysis

The morning of June 28 was devoted to a highly technical symposium on spermatozoal morphology, but some of the conclusions were also of immediate clinical interest. Dr. JOHN MCLEOD (U.S.A.) thought there was little correlation between sperm morphology and fertility in man, although poor morphology was commonly associated with poor motility, which had a very definite bearing on fertility. Provided the sperm density exceeded 20 millions per ml. and the percentage of active cells was not much below 40, fertility seemed to depend mainly upon the quality of sperm motion. He also presented evidence which suggested that the time taken to conceive became less as the frequency of intercourse increased, contrary to current belief. Following a botanical paper by Dr. JOHN WILKINSON (Exeter), Mrs. C. HARVEY (Exeter) suggested a possible viral aetiology for some cases of human male infertility. Dr. F. X. GASSNER (U.S.A.) showed how the rate of fructolysis in seminal fluid correlated better with the breeding efficiency of bulls than conventional criteria of seminal analysis.

A note in *Nature*, July 19, p. 122, by R. A. Lawrie discusses the differences between red and white muscle in a wide range of beasts from the Manx shearwater and the pigeon to the elephant and the blue whale. The red colour is due to the presence of myoglobin, a very close relative of haemoglobin, inside the muscle cells, and the author compares the myoglobin content with the normal respiratory activity of the muscles as shown by contained cytochrome oxidase and succinic dehydrogenase. Myoglobin may act as an oxygen store, and weight for weight the whale's psoas has a store 12 times that of horse muscle.

Correspondence

Because of the present high cost of producing the Journal, and the great pressure on our space, correspondents are asked to keep their letters short.

Colours of Gas Cylinders

SIR,—Cards showing the proposed colouring changes in medical gas cylinders have now been issued by the British Standards Institution. These changes aim at greater international uniformity, but as an English anaesthetist I regret the change in colour of the carbon dioxide cylinder from green to grey, and am alarmed to see that grey is also to be used as part of the colouring of the nitrogen and air cylinders. It is my belief that these changes will lead to confusion, and are a retrograde step in our planning for safe anaesthesia.—I am, etc.,

London, E.11. AUDREY MARSDEN.

Danger from Cuffed Endotracheal Tubes

SIR,—New methods and apparatus in anaesthesia bring new hazards for the patient and his anaesthetist. One possible source of danger seems to have escaped attention. The manufacturers are now producing cuffed endotracheal tubes of attractive appearance, with the cuff closely applied to the tube so that it slips easily through the glottis. In some of these, however, the pressure required to inflate the cuff is so great that it seems inevitable that before long a case of necrosis of the tracheal mucosa will be reported. In a batch of tubes recently supplied to one hospital there was no perceptible distension of the cuffs with pressures less than 200 mm. Hg; while to produce sufficient inflation of the cuffs of No. 10 tubes to give a gas-tight fit in the adult male trachea required pressures well beyond the range of the standard sphygmomanometer. How much of this pressure is directly exerted on the lining of the trachea depends on the degree to which the cuff is over-inflated above the minimum required to fill the trachea, and on the distensibility of the trachea. As the trachea is not a very distensible structure—the cricoid ring still less so—it is easy to imagine a damaging ischaemia of the mucous membrane occurring during the course of a long operation.

The inflation pressures of cuffs may easily be measured by a simple adaptation of the attachments of the sphygmomanometer on the anaesthetic trolley, and it is suggested that tubes should be rejected when the minimum pressure required to give a gas-tight fit greatly exceeds the systolic blood pressure expected to be maintained during the operation.—I am, etc.,

Chester. G. A. EASON.

The Secretion of Milk

SIR,—To a clinician interested in human lactation, your leading article (June 21, p. 1340) emphasized the magnitude of this problem. In spite of extensive research into animal endocrinology there is still nothing which can be given to mothers with lactation difficulties to enable them to breast-feed their infants satisfactorily.

It is in the clinical field, however, that progress has been made in achieving and maintaining successful breast-feeding. This is well exemplified by the work of Dr. Harold Waller (*Arch. Dis. Childh.*, 1946, **21**, 1; *Lancet* 1950, **1**, 53; *British Medical Journal*, 1950, **2**, 351). By antenatal care of the breasts, the use of shells to correct deformities of the nipples, the teaching of manual expression of surplus milk, and by other measures, highly successful results have been achieved. Others working in the maternity services can obtain equally good results by the application of these methods. Nevertheless, the problem of the woman with hypogalactia, and the mother whose milk supply fails for no apparent reason, still remains. The answer may come from endocrine research, but it is more likely to be found by a closer co-ordination with clinical practice.—I am, etc.,

London, N.W.3 DAVID MORRIS.

Pregnancy and Hydatidiform Mole

SIR,—Dr. Elizabeth M. Rose's report (June 14, p. 1285) stimulates me to forward details of the following case of pregnancy terminating in the delivery of a premature living infant together with a hydatidiform mole of much larger mass.

A primigravida aged 35, thought to be 20 weeks pregnant from her last menstrual period, attended the antenatal clinic complaining of intermittent vaginal bleeding for the previous eight weeks. Her uterus was approximately 22 weeks in size. Since her general condition was poor (haemoglobin 50%, Haldane; severe normocytic hypochromic anaemia, pulse rate 100–120) she was admitted to hospital forthwith. The bleeding, which was very slight in amount, ceased completely in 48 hours. No local cause was present in the vagina or cervix. Straight radiography of the abdomen revealed a single foetus which, however, was reported to be only of about 14 weeks' maturity. Four pints (2 l.) of blood were given, with only slight improvement, and she then had a continuous low-back pain, becoming worse, and the uterus was growing much more rapidly than normal.

Rhythmical uterine contractions commenced 17 days after admission. The membranes ruptured after one hour, and three hours later the patient had spontaneous delivery, by the breech, of a live male infant weighing 1 lb. 2 oz. (500 g.). Unfortunately, it survived only 20 minutes. A few seconds following delivery a massive post-partum haemorrhage occurred and among the blood were typical hydatidiform vesicles. Immediate manual removal of a normal 24–26 weeks placenta and about two quarts (2 l.) of hydatidiform mole was carried out. The mole contained many fibrous septa which had to be torn piecemeal from the uterine wall, with the result that its interior still felt very shaggy when the uterus had been cleared as thoroughly as thought advisable under the circumstances. It was felt that the evacuation could be completed more satisfactorily with a curette during the puerperium. Three pints of blood were given, two rapidly, and one over the next hour. Post-operatively, the patient's condition was satisfactory. Pulse and blood pressure were normal. No excessive loss occurred during the puerperium, nor did she become morbid. On the eighth day the uterus was curetted and a surprisingly large amount of debris obtained. No luteal cysts could be felt. Haemorrhage was again very brisk and a further two pints (1 l.) of blood were given. The same evening her temperature rose to 102° F. (38.9° C.), but had subsided by the next day and remained within normal limits until discharge from hospital.

Arrangements have been made for quantitative follow-up Aschheim-Zondek tests, which, although one has found them to be of little or no help in arriving at a diagnosis of hydatidiform mole, may indicate development of malignant change in a case where mole already has been confirmed by other methods.—I am, etc.,

Newry, Co. Down. M. R. NEELY.

Correcting Congenital Talipes

SIR,—During 30 years of general practice I have treated six cases of talipes equino-varus, including one case in a German prison camp. The method employed entailed the application of successive *divided* plaster casts and was commenced when the child was 14 days old. The aim was to force the feet over to calcaneo-valgus.

The cast was removed at least twice a day, and the district nurse and the mother were instructed in carrying out necessary daily manipulations. This allowed of bathing the child comfortably. The feet were normal and without spasm at 1 year old and have remained normal feet since.

This method seems to be preferable to any other, since it is the business of the doctor, the nurse, and the mother to see that improvement is maintained. Perfection can be secured with greater certainty in the home rather than by occasional visits to an often far distant surgical out-patient department.

Subcutaneous tenotomy of tendo Achillis was only required in the prison camp child when he was 1 year old, and this was done when we were liberated by the French forces.

The method appears preferable to the use of sticking plaster, which worries the skin, or to the use of splints. The plaster cast when half dry, and before it was divided, was moulded into the new position (moulded nearer to the heart's desire) at each session. The daily removal of the divided cast and manipulation ensured that there was no rigidity or wasting of the foot muscles.

The use of plaster is decried (Denis Browne, *British Encyclopedia of Medical Practice*, 1939, **2**), but home treatment with divided plaster-of-Paris casts is, in my very limited experience, preferable to any other method.—I am, etc.,

Jersey, C.I. H. GORDON OLIVER.

Blindness in Nigeria

SIR,—I was interested to read the opinion of Dr. F. H. Budden (June 7, p. 1248) that in Northern Nigeria the commonest cause of blindness is trachoma, and the second commonest is onchocerciasis. This is in agreement with my findings of more than 10% trachoma and more than 50% onchocerciasis (of whom one-third had ocular lesions) in 500 Nigerian soldiers examined during the war in Gambia (Scott, *Brit. J. Ophthal.*, 1945, **29**, 12).

One statement by Dr. F. E. Stock (*British Medical Journal*, 1946, **2**, 25) that trachoma is uncommon in Northern Nigeria, and another by Dr. G. E. Dodds (ibid., 1952, **1**, 584) that onchocerciasis has not yet been discovered in Nigeria, may be due to the varying incidence in such a vast territory.—I am, etc.,

Johannesburg. J. GRAHAM SCOTT.

Glaucoma

SIR,—Mr. S. J. H. Miller (June 21, p. 1356) states that it was the finding of field changes with a normal disk in cases of *congestive glaucoma* which led to his statement that such an association could exist. I was under the apparently mistaken impression that when writing to you I had made it sufficiently clear that my remarks referred to cases of *glaucoma simplex* only, excluding congestive glaucoma. I now feel that he and I may have been at cross purposes.

Atypical field changes without disk cupping, although not, I think, without disk pallor, may certainly occur in eyes suffering from congestive glaucoma which have undergone a period of greatly increased tension. I attribute these changes to secondary vascular disturbances, basing my views on the attenuation of the retinal arteries with a measure of optic atrophy which are visible in such cases. Indeed, I regard the possibility of such a catastrophe as one of the weightiest arguments against delay in undertaking operative interference in severe cases of congestive glaucoma. This type of field change does not occur in cases of glaucoma simplex, in which I maintain that scotomata and a disk without cupping are mutually exclusive, and Mr. Miller's further statement in his letter that every case of simple glaucoma discussed in his paper presented some form of cupping, and some form of field defect, would seem, as far as I understand it, to support my belief.—I am, etc.,

London, W.1. R. AFFLECK GREEVES.

Case of Cutaneous Horn

SIR,—The following is an account of an interesting case which presented a prominent growth arising from the parietal eminence of the head on the right side and resembling in a very striking manner the curved horn of a sheep. Reports about the case got into the newspaper columns and produced an army of visitors invading the hospital for the sight of a beastly possession and a devil's hallmark growing from a human head.

The patient was a woman 45 years old and very much stunted in stature as a result of marked kyphoscoliosis of the spine. She had six deliveries, all normal, and all the children are alive now, the eldest being 24 years and the youngest 6 years of age. She was admitted to hospital on October 17, 1949, for getting the horn removed, as its curved portion was impinging upon the scalp, causing her much pain.

The history of the growth is that in her youth she had a big abscess over the parietal region on the right side which burst and healed up, leaving behind a widely scarred area in its place. Later on it was observed that there was a particular spot in the scarred area from which scabs used to come away while the hair was combed. A definite growth was first noticed about four years ago as a small projection over the parietal eminence. This by gradual increase in length attained its present size and form.

The horn was originating from about the centre of an area of whitish scar tissue covering the greater part of the parietal region. It was dark brownish in colour, with its external surface smooth and furrowed longitudinally. It measured 9½ in. (23.8 cm.) in length. The base was thick and curved in shape, measuring 4 in. (10 cm.) in circumference. From there it grew first horizontally outwards for a short distance and then, gradually diminishing in thickness and taking a spiral shape, ended in a bluntly pointed tip. The curve of the spiral was impinging firmly against the scalp at a point a little below and behind the base. There was some inflammatory disturbance in the upper and anterior aspect of the base as evidenced by tenderness and escape of pus from between the horn and the edge of the scarred skin covering it. The horn was slightly movable at the base. A skiagram of the skull showed a circular defect in the parietal bone which corresponded with the site of origin of the horn.

On November 9 the horn was removed under general anaesthesia. The incision in the scalp was made all around and well away from its base. There was a soft whitish and granular mass of matter under the base, filling up the gap in the skull revealed by the *x*-ray and getting slightly into the space between the dura mater and bone. Removal of this white matter was completed with the aid of a small scoop after gouging away the irregular edges of bone in the gap. The wound was left to heal by granulation.

Cutaneous horns are of very rare occurrence. They have no congenital origin. Unlike those in animals, they have no osseous attachment. They are epidermal tumours composed of keratinized cells. Instances are recorded in the literature of their growth from the scalp, eyelid, genitals, arm, and nose (*Diseases of the Skin*, MacKenna; *British Medical Journal*, 1949, **2**, 635; ibid., 1949, **2**, 984). They are benign in nature and usually grow from old scar tissue in the skin. Some cases are reported to have developed malignant changes at the base.

The specimen removed in the present case is preserved in the General Hospital, Ernakulam. It would appear from its length the biggest of its kind found mentioned in the literature. A good view of the horn is shown in the accompanying photograph.

I am greatly indebted to the authorities of the General Hospital, Ernakulam, for their valuable help and advice in presenting this case.

—I am, etc.,

Ernakulam, S. India. M. A. PAUL.

Giant Gallstone

SIR,—The following case of obstruction of the large bowel by a gallstone, I feel, is sufficiently rare to merit recording.

A woman aged 76 with 13 children was admitted with acute large bowel obstruction. It was noted in her history that 14 months previously she was in the medical wards with acute cholecystitis and there considered unfit for surgery.

At operation the cause of the obstruction was found to be a gallstone impacted in the iliac colon. This was easily removed after milking it upwards to the descending colon. The patient

progressed very favourably for the first five days and was beginning to get up. Unfortunately, she then developed an intractable diarrhoea, followed by bronchopneumonia to which she eventually succumbed three weeks after the operation.

The gallstone weighed in its dry state 2¼ oz. (78 g.), was 3¾ in. (9.5 cm.) long, and was composed of bilirubin and cholesterol with traces of organic material. It appeared to be a complete cast of the gall-bladder. Post-mortem examination revealed the presence of a narrow cholecysto-colic fistula.

It has been stated that the incidence of intestinal obstruction due to gallstones is about 2% of all obstructions. Of this number gallstone obstruction of the large bowel occurred in only 2.4% of the cases.—I am, etc.,

Banbury. K. MACKESSACK LEITCH.

Pyloric Stenosis after Ferrous Sulphate Poisoning

SIR,—Several cases of ferrous sulphate poisoning have been described in the *British Medical Journal* in the past few years—Forbes (1947, **1**, 367), Thomson (1947, **1**, 640, and 1950, **1**, 645) and Spencer (1951, **2**, 1112)—but there has been no report of pyloric stenosis as a complication.

On March 31, 1951, a boy aged 3 was admitted to hospital after swallowing about 67 ferrous sulphate tablets. He was unconscious, cold, and shocked; his stomach was washed out with dilute sodium bicarbonate and the later specimens were blood-stained. He was treated with nikethamide, 1 ml. intramuscularly every half-hour. Two hours after admission he regained consciousness and started to vomit small amounts of blood; he was very drowsy and thirsty.

On the next day his condition was still very poor, but he took frequent sips of milk and water. In an attempt to prevent liver damage, 5 g. methionine was given intravenously in a pint (560 ml.) of saline, followed by 2.5 g. daily by mouth for seven days. He was never jaundiced and there was no palpable enlargement of the liver.

Within the next few days he slowly improved. He had occasional mild vomiting attacks which became less frequent. On April 25, almost a month after admission, the child began to get attacks of projectile vomiting after his meals and gastric peristalsis was observed. "Eumydrin" (3 minims (0.17 ml.) of 1 in 1,000 solution) was given four-hourly by mouth, but the vomiting continued. After a barium meal no barium had left the stomach in four hours but it was empty after 24 hours, suggesting some degree of stenosis at the pylorus.

On May 31 the abdomen was explored by Mr. F. Welsh. The stomach was found to be dilated and the pylorus was thickened and stenosed; a longitudinal incision was made over the stenosis. The gastric mucosa was red and oedematous; after removing a small section for histological examination, the pylorus was closed transversely.

Recovery was rapid following operation; there was no further vomiting, and he began to gain weight. He was discharged 12 days after operation, and there has been no recurrence of his symptoms.

Histologically there was very superficial acute ulceration of the gastric mucosa; the submucosa was thickened by fibrosis, which also extended into the muscular coat. A considerable amount of ferric iron pigment was present in patches in the submucosa and in smaller amounts in the mucosa. No ferrous iron could be identified. It was impossible to determine whether the iron pigment was present as the outcome of haemorrhage or as a result of the poisoning.

This child took 67 tablets and yet survived with no other treatment except lavage, stimulants, and nursing care. No claims are made that the methionine played any part in preventing liver damage. The cause of the pyloric stenosis is not quite clear, but it was probably due to the persistent oedema and some early contraction of the surrounding fibrous tissue. It may be that the child would have got well without operation when the oedema had subsided, but clinically he was worse and operation seemed the best course.—I am, etc.,

Birmingham. P. H. CROSSKEY.

Pilonidal Sinus

SIR,—Mr. David H. Patey has done much to quicken our interest in pilonidal sinus by his observations on the obscure subject of its aetiology—observations which doubly deserve to be called penetrating. His recent letter (June 21, p. 1356) raises issues of much interest, and they should be widely known, because there are still many surgeons both in this country and in America who hold the older view of the aetiology in spite of so much contrary evidence.

There are two points about the embryological theory which are worth noting. Mr. Patey speaks of the climate of surgical thought which nourished its growth, and it is impossible to deny that this was an important factor in its evolution and spread, but surely the most important factor of all was the almost constant finding of a median skin-lined sinus furnished with sweat glands and sometimes rudimentary hair follicles, and manifestly of developmental origin. Error arose because the part played by this abnormality was mistaken. The second point concerns Hodges's admirable paper of 1880, to which Professor Ian Aird (April 26, p. 902) pays tribute. In this paper are set out with striking clarity the points which show that the hairs in a pilonidal sinus get in from outside. In the face of this it is surprising that the embryological theory was able to take root and flourish.

The penetration theory explains very satisfactorily all the findings in those pilonidal sinuses which contain hairs, and in particular it explains the reason for recurrence. But hairs are found in only a minority of so-called pilonidal sinuses, and the cause of the others is difficult to explain. Mr. Patey's very interesting suggestion of a sucking force certainly helps to explain the perpetuation of the lesion once the infected sinus has formed, and it seems extremely likely that it is a factor in the recurrence of those cases treated by excision and suture without proper safeguards. It does not convincingly explain the original formation of an infective lesion which lies fairly deep in the subcutaneous tissue and sometimes (though rarely) develops in the absence of any macroscopic communication with the surface. Other mysteries remain—for example, the preponderance in males and in hairy people (even when the sinuses do not contain hairs), and the extreme rarity of the condition in all coloured races.

Mr. Patey's remarks about treatment call for comment. To describe excision as a relic of the embryological theory is surely to ignore the need to remove all hairs, including those which have penetrated the floor of the abscess cavity, and also to deny the fundamental advantage of primary suture, which, if it succeeds, must be the quickest of all surgical methods of treatment. But it must be emphasized that if primary suture is to succeed healing must be by first intention throughout its length, and not one hair must be allowed to creep in before the scar is sound. This can only be achieved by extremely careful post-operative shaving, especially in the natal cleft below the wound. The importance of repeated shaving is also recognized, probably on empirical grounds, by the successful exponents of the exteriorization operation, to whom Mr. Patey refers, and must be a major factor in their success.

—I am, etc.,

London, N.18. B. H. PAGE.

Symmetrical Arterial Occlusion

SIR,—The following case resembles in some ways the two cases described and discussed by Drs. Eric Skipper and F. J. Flint (July 5, p. 9).

A man of 34, first seen in July, 1951, had had nephritis at the age of 11. He stated that his pulses had been difficult to feel when he was 16. He denied rheumatism, chorea, and venereal disease. He served in the R.A.F. from 1939 till 1946 and was discharged fit. He remained well until October, 1949, when for some months he was wakened by paroxysmal dyspnoea. Since then he had been increasingly short-winded on exertion, had had occasional stabbing pains under the left nipple but no anginal pain, and had noticed some fullness in the left arm. Since May, 1951, he had had some six attacks of blindness in the left eye lasting a few minutes and preceded for 10 or 15 minutes by left frontal headache. During these attacks vision in the left eye was reduced to a blur.

Examination showed a pallid but not anaemic man of average build. Dilated veins were visible in the left arm, the left side of the neck, and over the front of the left hemithorax. The veins above the right clavicle were not distended. Those of the left side were filled to a height of 2 in. (5 cm.) above the sternal angle. Pulsation was very weak in both radial, both brachial, and the left common carotid arteries, but good in the right common carotid artery and its branches and in both femoral arteries and their branches. The blood pressure could not be measured in the arms. In the thighs it varied between 230 and 290 mm. Hg systolic and 130 and 140 mm. Hg diastolic, but differed little on

the two sides. 10 mm. of alternation was noted with the higher systolic pressure. There were marked left ventricular hypertrophy, a loud aortic second sound, an early diastolic murmur over the sternum, and an early diastolic gallop rhythm. The lungs appeared normal. There was no enlargement of the liver or oedema of the legs. *X*-ray examination showed a large hypertrophied left ventricle whose left border moved little. There was some enlargement of the left auricle and of the pulmonary artery and a little localized dilatation of the descending aorta just below the arch. The fundi appeared normal. The haemoglobin was 85%. The urine was normal. The blood urea was 28 mg./100 ml. and the urea clearance 105% of the normal value. An intravenous pyelogram showed normal excretion and normal outlines. Many calcified glands were seen around the abdominal aorta and over the sacrum. The electrocardiogram showed a horizontal heart with high voltage in aVL, together with sharp T-wave inversion in aVL, I, and V_6 and ST depression in II and V_4. The abnormalities in this and a subsequent tracing do not suggest infarction. The Wassermann reaction was negative in the blood but the Kahn reaction was twice strongly positive. No scar of a chancre could be found. A biopsy of the left vastus intermedius muscle showed normal arterioles. He was given bismuth (total 2.2 g.) and penicillin (total 12.6 million units) by intramuscular injection. In April, 1952, the Kahn reaction was "doubtful" and the Wassermann reaction still negative. When he was last seen, on July 2, there was little change in symptoms and findings.

This man differs from the two patients described by Drs. Skipper and Flint in that the right carotid arteries are unaffected. For this reason visual disturbance has been limited to the left eye and there have been no cerebral symptoms. He differs also in having a large heart and a positive Kahn test in the blood. Syphilitic infection cannot be considered proved but seems probable. The obstruction, whatever its cause, must be in the trunks of the vessels and not in their origins from the aorta, since the innominate artery must be presumed patent. There is obstruction, perhaps thrombosis, in the left innominate vein. It is difficult to ascribe the great enlargement and hypertrophy of the heart in so young a man solely to the hypertension and the slight aortic leak. Possibly the coronary arteries share in the hypothetical vascular disease. The boyhood nephritis cannot be blamed for the hypertension in view of the normal urine and normal excretion.—I am, etc.,

St. Bartholomew's Hospital, Rochester. F. ALAN RICHARDS.

Basal Metabolism in Hypopituitarism

SIR,—Dr. M. H. Oelbaum states (July 19, p. 110) that he has investigated six cases of hypopituitarism with B.M.R.s of −65, +1, +15, −15, −10, and −20 respectively, and in his discussion quotes, as an authoritative statement about myxoedema, from a paper by Asher (*British Medical Journal*, 1949, **2**, 555), "I have found the B.M.R. of little help." It would be of great interest if Dr. Oelbaum would state what normal standards for the B.M.R. he employed (i.e., Aub-DuBois, Mayo Clinic, Harris-Benedict, or Dreyer (based on actual or ideal weight)). A B.M.R. expressed simply as a percentage without stating a standard means just as little as a prothrombin time given in seconds without a control. I find it difficult to accept such B.M.R. results as −65, +1, +15 in hypopituitarism without confirmation or publication of the actual records (if estimated by the open circuit) or spirogram charts (if estimated by the closed circuit).

The statement by Asher has been contested in subsequent correspondence in the *British Medical Journal* (1949, **2**, 707, 759).—I am etc.,

London, W.1. J. DOUGLAS ROBERTSON.

Visual Hallucination of the Self

SIR,—The correspondence which followed a lecture by Professor Jean Lhermitte on autoscopy in June, 1950, at the National Hospital, Queen Square, and published in the *Journal* of March 3, 1951 (p. 431), was notable for the fact that none of the writers discussed cases in their own experience. Perhaps this is not surprising in view of the rarity of this intriguing phenomenon.

Recently I have had under my care a young woman whose chief complaint consists in the hallucinosis of the self. During the last few months she has "seen" herself with the vividness of reality. The vision has intrusive qualities resulting in an interruption in her train of thought. The hallucination is not in the nature of a mirror image, in that the other self is usually dressed in different clothing and is differently occupied. The clothes, however, are nearly always those actually possessed by the patient. Furthermore, the autoscopic vision is silent, and quite unheedful of the patient. In addition to this singular hallucinosis she has a strong tendency to obsessional thinking, accompanied by the symptoms of an anxiety state. She is of smart appearance, and she has no difficulty in attending to her customary work. Indeed, she is gradually learning to ignore the other presence, with beneficial results to her peace of mind. These curious symptoms originally developed in a setting of fear induced by the dread of a minor gynaecological operation. There is no history of major mental disorder in the family. The phenomenon of self-hallucination is of peculiar interest in that a voluntary effort to visualize the whole of oneself is a matter of profound difficulty. It usually involves an attempt to remember a full-scale photograph, since certain parts of one's body are inaccessible to self-inspection. In this case many of the presenting features suggest an obsessional neurosis.

—I am, etc.,

Tilbury. J. TODD.

Cheap Ear Insufflator

SIR,—The small chloramphenicol insufflator shown in Fig. 1*a* was designed for the patient's own use in the treatment of infections of the ear. It is economical, efficient, and convenient for self-use. The capsule is perforated by a large pin, as shown in Fig. 1*b*. The powder can be conveniently ejected from the insufflator by holding the bulb between the thumb and middle finger and giving it a sharp tap with the index finger, much as one might flick ash from a cigarette.

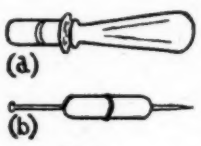


FIG. 1

Treatments are carried out twice a week, and several treatments, which one capsule will provide, are often enough to clear up local infection in the ear. Patients who have had fenestration operations find it a very convenient form of post-operative treatment.

This is a very economical method of using chloramphenicol in the local treatment of chronic otorrhoea, and of course the cost of the insufflator is a mere fraction of that of an ordinary insufflator.

It is also possible to insufflate other chemotherapeutic powders into the ear, using a glass pipette, such as is used for drops, attached to the rubber bulb. Sufficient powder for insufflation is scooped up by the pipette after removal of the bulb; the bulb is then refitted. For this purpose a pipette with fine outlet-hole is more efficient. In cases of drug-sensitive external otitis, the insufflation of zinc oxide and starch powder by this method is often useful.

—I am, etc.,

London, W.1. W. H. B. MAGAURAN.

POINTS FROM LETTERS

Left-sided Appendicitis

Dr. J. F. ALEXANDER (Sevenoaks) writes: Mr. Maurice Hershman wrote (June 21, p. 1357) that he had operated for acute appendicitis in a youth with transposition of the viscera. He stated that only two references to a similar condition could be found after a search by Mr. W. R. LeFanu, librarian of the Royal College of Surgeons. (But see also *British Medical Journal*, July 5, p. 43, and July 19, p. 165.) I can add another case. In 1926 I removed an inflamed appendix from a lady with transposition of the viscera, through an incision in the L.I.F. The position of liver and caecum, on the left side, was confirmed at the time. Several doctors have since noted the right-sided heart. The patient is now about 60; and, although she has never had robust health, she has had no important ailment except the appendicitis.

Obituary

Sir HUGH CAIRNS, K.B.E., D.M., F.R.C.S.

The death of Sir Hugh Cairns was recorded in last week's *Journal* (p. 233). We are indebted to Sir RUSSELL BRAIN, P.R.C.P., for the following appreciation:

The debt Cairns owed to Cushing is well known, but he was also influenced by Foerster. Cushing came to neurology by way of neurosurgery, while Foerster had been a neurologist before he became a surgeon. Both were agreed that the neurosurgeon ought to be his own neurologist, in that he should not be dependent on a neurologist for the clinical investigation of his patients. This idea was reinforced indirectly by the improved neurosurgical technique which we owe largely to Cushing, and as a result of which many patients survived operation and many more operations became possible. Furthermore, the improved management of the unconscious patient made it possible to keep patients alive for long periods in states of coma or stupor. The resulting neurological observations naturally came to be made by the neurosurgeon, who had to take account of them in his daily examination of his patients. Thus the development of neurosurgery greatly enlarged the field of neurology by opening new regions of disordered function of the nervous system to the investigation of the neurosurgeon. Cairns made no great discoveries in this sphere, but his keen observations were an education to his colleagues as well as to his pupils, and some of them are embodied in valuable papers, such as that on akinetic mutism, and his Horsley Lecture on consciousness, published in *Brain* only a few days before his death.

Cushing believed also that the neurosurgeon should have personal knowledge of neuropathology, and Cairns carried this idea even further. When he returned from Boston he studied neuro-ophthalmology, and himself charted his patients' visual fields; he worked in neuropathology, and with Professor Dorothy Russell published papers on the gliomas and on subdural haematoma. He correlated radiological with operative and pathological findings, and with Dr. M. Jupe wrote a monograph on neuroradiology. In the same way his experience of antibiotics during the war led him, in collaboration with Dr. Honor Smith, to study their application to pyogenic and tuberculous meningitis; and, having always been interested in his patients' mental states, he turned to experimental physiology in the search for an improvement on the operation of leucotomy. Thus his widely ranging mind saw a specialty not as a circumscribed area of knowledge but as a dynamic field of interrelationships with other branches of medicine, and the future may judge this to have been his chief contribution both to neurosurgery and to neurology.

Mr. D. W. C. NORTHFIELD writes: Although it was in 1927 that Hugh Cairns returned from Harvey Cushing's clinic with the intention of devoting his energies to neurosurgery, another five years was to elapse before he achieved a unit with its own personnel. During that five years he had to contend with those innumerable difficulties inseparable from the introduction of a highly specialized branch of surgery, with its peculiar radiological and nursing problems, into an institution where such methods were an innovation. I first came into contact with Cairns at the London Hospital at the end of that preliminary period, when the neurosurgical unit had at last been formed. There was then already firmly established the Cushing tradition that every case should be "worked up" as though intended for publication, a habit which makes for the highest standards of case-recording. This same high standard of work was seen in the careful attention to every detail in the conduct of the case. To achieve this meant work, hard work for everyone, but this discipline was willingly accepted because of the sense of service to the patient and to neurosurgery which he himself exhibited. A high standard of work is an obvious necessity for success in any branch of endeavour, but the sense of personal service to the patient is certainly not always obvious to the newcomer in a clinic, and indeed is not always present. To me this characteristic of Hugh Cairns, that of becoming the confidant and friend of the patient and thereby earning his fervent gratitude—an ideal doctor–patient relationship—is one of my choicest memories. It was a new experience for me to discover that the surgeon himself interviewed the relatives of patients both before and after operation—one example among many others which I have endeavoured to follow.

In his surgery he was neat and gentle. His comments on the heavy-handedness of new assistants were always to the point, for he realized so well that the lack of gentleness of even an assistant might spell disaster for the patient. He did not welcome conversation during the operation, but afterwards he was always willing to explain everything to a student of his methods, and there was always a reason for each step. If gentleness was one of the essentials of his technique the other was his insistence that all bleeding should be controlled as it was encountered, thus ensuring a dry field for each fresh step.

Among many other aspects of this man and his work stands out his excellent judgment. This showed itself in many ways. In diagnosis he was able to pick out the important features of the case and thus achieve accuracy. During an operation he always seemed able to assess correctly the patient's ability to withstand prolongation of the session and was never afraid to carry out a two-stage operation if advisable. In committee work this shrewd judgment showed itself in a different field, for he quickly perceived the strong and weak points of any particular argument and proposed course of action. Doubtless it was this capacity which made him such a good administrator and enabled him to render conspicuous service to the nation during the war. Many of us regretted his decision not to stand for a further term of office on the council of the Royal College of Surgeons. But his reason for withdrawal was typical and reflected his passion for neurosurgery: "I have not now many years of professional life, and I want to get on with some clinical problems."

The following tribute which he paid to Harvey Cushing at the end of a year's work at the Peter Bent Brigham Hospital can be applied with equal truth to Hugh Cairns himself: "The part which he has played in the development of intracranial surgery may confidently be left to the judgment of posterity. . . . On the mind of one of his pupils his fertile enthusiasm and high courage have combined to leave an indelible impression."

CATHERINE CHISHOLM, C.B.E., M.D., F.R.C.P.

Dr. Catherine Chisholm, who died at Withington, Manchester, on July 21, at the age of 74, was the first woman to be accepted as a medical student by Manchester University. Her work for sick children in Manchester was of outstanding importance.

Catherine Chisholm was the elder daughter of Dr. K. M. Chisholm, a general practitioner in Radcliffe, Lancashire. After taking an Arts degree at Owens College in 1898 she applied for admission to the medical school, and she and her friend Catharine L. Corbett were both accepted, though there was consternation among the teaching staff. However, her medical studies went well, and she won several prizes. After graduating M.B., B.Ch. in 1904, she acted as house-surgeon at the Battersea Maternity Hospital and at the Clapham Maternity Hospital, and later was resident medical officer at the Bingley Sanatorium. Equipped with this hospital experience, which must have been exceptionally extensive at a time when few hospitals wished for women house officers, she started in general practice near to the

university in Manchester and soon built up a large practice of women and children. Her proximity to the Manchester High School for Girls enabled her, on being appointed the first medical officer, to take a deep interest in both the school and the girls and to build up a fine school medical service.

Her great interest in children soon made her wish to specialize, and, after proceeding M.D. (with commendation) in 1912, she applied for the post of physician to children at St. Mary's Hospital for Women and Children, but was unsuccessful. She felt that her application had failed because of her sex, so, nothing daunted, she turned her attention to the founding of a hospital which would have a staff of women doctors. Together with her women colleagues and some prominent lay women, such as Miss Margaret Ashton and Lady Simon, plans were drawn up for a small hospital of 12 cots. On August 4, 1914, the hospital was opened with a staff of women doctors, and under her guidance and direction it has grown into the much larger hospital now known as the Duchess of York Hospital for Babies. Opened at a time when the risks of cross-infection contraindicated the admission of infants to many hospitals, the Babies' Hospital soon was unable to satisfy the demands upon it. The scrupulous care in nursing and the open-air principles in the wards, instituted and guarded by Dr. Chisholm herself, diminished, at least, some of the dangers of hospitalization. Her intense interest in the prevention of infection and detailed attention to the routine work in the wards were reflected in the attitude of the nursing staff and of her colleagues, who owe so much to her wisdom and foresight. Although Dr. Chisholm was appointed physician for children to the Manchester Northern Hospital in the same year, and not long afterwards became paediatrician to Hope Hospital, Salford, her primary interest was always the hospital she had founded. She was deeply touched when the last ward to be built before the hospital was taken over by the State was named the Catherine Chisholm Ward in her honour.

After the war of 1914–18 she spent some months in the U.S.A., returning full of enthusiasm and new ideas and with the decision to abandon private practice in favour of consulting practice for babies and children. She turned her attention to the nutritional disturbances in babies and young children and to the adolescent problems of girls, writing various papers on these and allied subjects. She started a breast-milk bank at the Duchess of York Hospital for Babies, and since then this has provided supplies of breast milk for infants in special need of it.

Dr. Chisholm had many links with the University of Manchester. She was for many years medical officer to the women students in the training department, and later became lecturer in vaccination and on diseases of children. She was the first woman on the board of the faculty of medicine, of which she was later the chairman.

Her hospitals, her university work, the Manchester High School for Girls, and many other interests and committees fully occupied her time. Even her rare holidays were often spent in conferences, such as those of the International Medical Women's Federation or, more recently, the British Paediatric Association. She was a founder member and a past president of the Medical Women's Federation and had been secretary and president of the Manchester branch. Her home was always a gathering-ground for medical women and for many others whose interests and friendship she shared.

During the last war she continued her active life, adding to it attendances at Booth Hall Hospital for Children. Although her interest in all she undertook continued, she realized after the war that she must relinquish some of her work, so gradually and reluctantly she gave up the hospital work which she had always so deeply enjoyed and to which she contributed so much. She remained on various committees, the last being the management committee of the group which included the Duchess of York Hospital for Babies. Her work received public recognition when she was appointed C.B.E. in 1935. In 1949 she was elected F.R.C.P., and a year later she was elected the first president of the Manchester Paediatric Club. For more than 40 years a member of the British Medical Association, Dr. Chisholm served as a vice-president of the section of diseases of children at the annual meetings of the Association at Portsmouth in 1923 and at Manchester in 1929. She was also chairman of the Manchester Division in 1938–9.

Catherine Chisholm was a woman of wide interests. She read a great deal, loved good concerts, and kept abreast of modern thought. She enjoyed meeting people, and was never too busy to find time to see an old friend or to make a new one. She had a strong sense of rectitude, and could be outspoken and more than frank if the occasion warranted it. Her vitality and broad outlook will long be remembered by her colleagues, to whom she was an outstanding example as a good doctor and a very human unforgettable personality.—S. K. G.

Miss MABEL RAMSAY writes: It is over 45 years since I first met Dr. Catherine Chisholm in Manchester. She was then one of the first medical women to graduate as M.B., Ch.B. in Manchester. As I then knew her she was young, vigorous, and active, flying round in what most of us began with—a Ford motor-car. At first she did the work of a general practitioner, and then her interests turned to helping babies. She and her colleagues founded what I think was one of the first babies' hospitals in Great Britain, later known as the Duchess of York Hospital. Later on I was to see the result of this effort to preserve the lives of many premature and delicate babies. Has history shown that her effort was worth while? Dr. Catherine Chisholm wanted to write some record, but whether it has ever been done I do not know. She was one of the founders of the Medical Women's Federation in 1917, and thereafter became president for a term. During the time she served on the council of the Federation I was again associated with her, being a welcomed visitor to her charming home. Now she has died she will be greatly missed by all her colleagues and those to whom she passed on the great knowledge she had acquired. When I saw her recently in Manchester she was still full of interest in what medical women were doing. She faced the end with a very gallant spirit.

Dr. WALTER GARSTANG, who died on June 19, a week before his 76th birthday, was born on June 26, 1876, and was educated at Cheltenham and at Owens College, Manchester, graduating M.B., Ch.B. from the University of Manchester in 1901 and taking the L.S.A. in the same year. After holding a house appointment at the Royal Lancaster Infirmary, he was in practice at Knutsford, Cheshire, where his father was medical officer of health, until 1905, when he moved to Hucknall, Nottinghamshire. He was appointed medical officer of health to the Hucknall Urban District Council in 1914 and held the post until March, 1948, when he retired on account of ill-health, but he continued in private practice until his death. When he became medical officer of health he found that Hucknall had one of the worst records in the county for infant mortality—134 deaths

in every 1,000 births. His untiring work for the improvement of that state of affairs was crowned when, in April, 1936, he laid the foundation-stone of a new maternity and child welfare centre, by which time the town's infant mortality rate had been reduced by about 80% and was one of the lowest in the county. Dr. Garstang also played a leading part in slum clearance and other improvement schemes and in advocating diphtheria immunization, with the result that the incidence of the disease in the town virtually disappeared. Dr. Garstang's main interest outside his profession was freemasonry, and he was a past master of the Byron Lodge. He leaves a widow, two sons, and three daughters.

Dr. BRIGID STANFORD (*née* O'Beirn), of Scunthorpe, who graduated M.B., B.Ch. from the National University of Ireland in 1939, died in London on June 22 at the early age of 36. We are indebted to Dr. T. H. Kirk for the following appreciation: The death of Dr. Brigid Stanford at 36 shocked the profession in north Lincolnshire. To her friends the news brought a tragic sense of personal loss. It was hard to believe that we should never again meet that warm, generous, and gay personality who was so much the centre of attraction at all our B.M.A. gatherings. Brigid Stanford was an unusual, indeed a unique person. It must surely be unprecedented for a girl to win first-class honours in her finals and have a golf handicap of three. Later she reached the last eight in the national championship, and, after coming to live in Scunthorpe, played regularly for the Lincolnshire ladies' golf team. She was a natural games player and for five years played hockey for her university. The large crowd at her funeral was a tribute to the affection in which she was held by patients, friends, colleagues, and all who during her short life had come to know her. We shall not readily forget her, and our sympathy goes out to her husband, Dr. C. F. E. Stanford, and to the two children.

Dr. ERNEST BEDDOE HULBERT, who died at Ealing on July 4, aged 84, had been in failing health for some time. He was a Londoner born and was educated at the City of London School. His medical studies were divided between University College Hospital, London, and Newcastle-upon-Tyne, and he graduated M.B. from the University of Durham in 1889, taking the M.R.C.S., L.R.C.P. in the following year. He proceeded M.D. in 1892. Early in his career Dr. Hulbert was a partner in a general practice at Windsor, but, finding that this was not his *métier*, soon abandoned it and joined the resident staff at the St. Marylebone Guardians' Infirmary (now St. Charles's Hospital) in North Kensington. Here he rose to deputy medical superintendent. On his retirement after many years' service he was for a time librarian to the Westminster Hospital Medical School and thereafter became medical officer to the Marylebone Dispensary. To all these various facets of medical practice Dr. Hulbert brought an intense seriousness. Perhaps because of their utter unlikeness, he became very friendly with the late Dr. Eric Pritchard, who sponsored his election to the Savile Club, where he was well known for many years as "the little doctor," for he was, in fact, of lowly stature. He took enormous pride and interest in the club and was never so happy as when browsing among its archives. Dr. Hulbert was unmarried.

Dr. ARCHIBALD SINCLAIR DAVID, who died at his home at Fyfield, near Ongar, Essex, on July 5, was born at Laugharne, Carmarthenshire, in 1870, one of seven children, all of whom distinguished themselves in their various careers. He was only 8 years old when his father was drowned in a sailing accident, and the family had a great struggle with poverty. Archibald David, by scholarship and hard work, put himself through the medical course at the London Hospital, and he qualified M.R.C.S., L.R.C.P. in 1900. He took the D.P.H. of the Royal Colleges in 1904. Immediately after qualification he went to South Africa, where he served in the Boer War with distinction and was mentioned in dispatches. He was invalided home after a severe attack of enteric fever. He then gathered much experience by spending some two years in various house appointments at the London Hospital, where he so distinguished himself that he was mentioned as a possible candidate for a staff appointment. However, he chose rather to marry and to settle down in general practice, first at Waterbeach, near Cambridge, and then at Fyfield, where he became a shining example of the best type of family doctor. He took a leading part in all village activities. He was a staunch supporter of the local church—being rector's warden for 35 years—manager of the local school, and president of the local branch of the British Legion. He took a prominent part in the local affairs of the British Medical Association, and was president of the Essex Branch in 1935–6. He and his wife helped to establish the local general practitioners' hospital, the Ongar War Memorial Hospital, which, it is to be hoped, will long remain a flourishing memorial to his vision and foresight. In the war of 1914–18 he was recalled to the Army, and one of his duties was to organize the hospital services at Boulogne. In the last war he took an active part in the local civil defence services.

F. E. S. H. writes: The first thought that Dr. David's presence stimulated in everyone's mind was, "Here is a cultured gentleman." One felt that his whole being was steeped in the classical tradition. He knew his Shakespeare and his Bible nearly by heart. He could always produce an apt quotation from either to meet any situation. Even on his deathbed he wrote postcards in Latin, Greek, and French to his brother. He was a great lover of music, and had a deep appreciation and a wide knowledge of a large variety of composers. Beethoven, however, always remained his favourite. He was also a keen gardener, and between the wars his garden was one of the show-places of the neighbourhood. But these many interests did not prevent him from taking a lively interest in modern scientific medicine, and his familiarity with recent developments up to the last year or two of his life was quite remarkable. Here was a man who could remember almost the first primitive *x*-ray machine at the London Hospital and yet who could use the latest scientific weapons with knowledge and discrimination. When his last illness first developed he had a clear grasp of the medical facts, and his chief concern was that his wife should be spared all unnecessary suffering. He maintained that grasp right to the very end and never deluded himself with false hopes or gave way to unnecessary fears. He looked death straight in the face and did not flinch, confident that he had done his duty. He was every inch a great English gentleman. One wonders, sometimes, whether we breed such men to-day.

Dr. THOMAS HOWARD, who died at Leicester on July 13 at the age of 84, was born at Limerick in 1868, and received his medical education at Queen's College, Cork, of which he was an exhibitioner, and at University College, Dublin, graduating M.B., B.Ch. from the Royal University of Ireland in 1893. After holding a number of resident posts and acting as a locumtenent, he joined Dr. D. J. Lawson at Portland, Dorset, succeeding to the practice on the death of Dr. Lawson in 1903. Many years later the link was reforged by the marriage of his own daughter to his former colleague's son, and it was to their house in Leicester that he came with his wife during the bombing of London in the last war, and it was in their house that he subsequently died. During his work at Portland, from which he retired after a spell of illness in 1929, he was not only engaged in active general practice but held the appointments of medical officer of health to the port of Weymouth and to the urban district of Portland. During the war of 1914–18 the duties attached to the former post entailed going out to sea to aid ships involved in "incidents" in the Channel, and he had to make arrangements for the reception of their crews and to provide for their comfort. Dr. Howard was a justice of the peace for the county of Dorset, and in 1917–18 he was president of the Dorset and West Hants Branch of the B.M.A. On retiring from general practice he became

interested in pathology, and, after studying in Dublin and in London at Charing Cross Hospital, he acted for a time as pathologist at the Bolingbroke Hospital. His eyes, however, began to give him trouble, and he eventually underwent operations on both of them for glaucoma. In spite of this handicap he maintained to the end a keen interest in all medical matters, keeping abreast of the times by reading the journals and being at all times ready to discuss clinical and other problems with all the zest of a far younger man. He is survived by his widow and daughter.—D. F. L.

Major-General RICHARD CLEVELAND MUNDAY, who died at Plymouth on July 15 at the age of 84, was born at Valetta, Malta, on December 17, 1867, the second son of Richard Munday, paymaster-in-chief, R.N., and was educated at Plymouth College and at St. Bartholomew's Hospital, qualifying M.R.C.S., L.R.C.P. in 1889. After holding a house appointment at the Royal Free Hospital he entered the Royal Navy as a surgeon in 1890, and retired in 1917 with the rank of surgeon captain. During the course of his career he received the China medal in 1900, the Somali medal and clasp 1908–10, and the Persian Gulf medal and clasp 1910–14. He was awarded the Gilbert Blane gold medal in 1913 and the Chadwick gold medal and prize in 1914 for his work on naval hygiene. Before he retired from the Service he was for a time assistant director-general of the Royal Navy medical service and in 1917 he became the first medical director-general of the Royal Flying Corps, with the rank (now obsolete in the R.A.F.) of major-general. For his services he was appointed C.B. in 1919. He was a member of the pensions appeal tribunal from 1921 to 1926, becoming its chairman. During the last war he was chairman of the Plymouth medical recruiting board. A thorough gentleman, he was held in high esteem by his medical colleagues in Plymouth, where he lived for many years. He married Miss Olive L. Burnard in 1895 and had one son and two daughters. Our sincere sympathy goes out to his widow and to his family.—G. D.

Dr. THOMAS BOWEN PEDLOW, who died at Lurgan, Co. Armagh, on June 16, in his 87th year, was educated at Lurgan College and at the old Queen's College, Belfast, where he graduated M.B., B.Ch. in 1892. He was a grand sportsman, and while still an undergraduate he won a rugby cap, playing three-quarters for Ireland in 1889. A tennis enthusiast, he promoted the game in Ulster and won many prizes at tournaments held throughout the province, and took a great interest in the coaching of the younger generation. He kept up the game until he was 80 years of age, and had been heard to say that when he could no longer play tennis he had no wish to live. He was a former president of the All-Ireland Tennis Association. Dr. Pedlow conducted an extensive practice in Lurgan and was respected by all. He held the position of visiting surgeon to Lurgan Hospital from 1919 to 1948. He was medical officer to the Post Office, medical officer to the rugby union club, and had held the appointment of factory surgeon. He was an active member of the British Medical Association for 58 years and was honorary treasurer of the old Ulster Branch from 1927 to 1937, and president of the Northern Ireland Branch in 1937–8. He was also at one time a member of the central war emergency committee. Outside his professional and sporting activities Dr. Pedlow was an eminent freemason. All his life he was a strict teetotaller and a non-smoker. He never drove a car and did all his rounds on a bicycle. Dr. Pedlow's wife, who predeceased him, was a sister of the famous Cecil Parke, a rugby international, who also won his singles match for Great Britain in the Davis Cup in 1912. They are survived by three daughters and one son, Dr. Robert Pedlow, who is in general practice at Lurgan. Their eldest daughter, Dr. Olive Mary Darling, practises in Belfast and is anaesthetist to the Samaritan Hospital in that city.—G. D.

Medical Notes in Parliament

Lords Agree to Hypnotism Bill

The House of Lords on July 21 went into Committee on the Hypnotism Bill. Lord LISTOWEL had tabled amendments to provide that the authorities controlling hypnotic performances should consider every application on its merits. Lord READING, for the Government, said there were practical difficulties to continued applications for licences of this kind. Lord LISTOWEL then withdrew his amendments, and the Bill was agreed to without amendment.

The Bill was read a third time in the House of Lords on July 24. It had already passed the House of Commons.

Policy on Cancer

Brigadier F. MEDLICOTT on July 22 advocated greater publicity for cancer treatment, urging people to seek early diagnosis and advice. He recalled the increase in the proportion of deaths caused by cancer, which he said had risen in the last 50 years in the United Kingdom to one death in seven, while in some countries it was as high as one death in six. The policy of reticence about the disease needed to be reconsidered. Only 18 months ago the Central Health Services Council had advised that it was undesirable for any scheme of cancer publicity to be carried out by any central Government organization. Evidence from doctors in general practice and from hospitals testified that reluctance to seek advice and delay in obtaining treatment were responsible for many deaths which otherwise could have been avoided. He quoted from the *British Medical Journal* for July 12 (p. 85) to show that the results of treatment in certain sites continued to show steady improvement and that surgery held out more hope for the sufferer. He said the Medical Society of London recently collected over 200 cases of one kind of cancer in which patients were alive more than 10 years after the operation.

Miss PATRICIA HORNSBY-SMITH said the House recognized the widespread concern at the incidence of this disease. Despite improvements in matters of treatment, the chief hope at the moment lay in earlier diagnosis and treatment. Cancer was not a disease which it was practicable to make notifiable. The Ministry was encouraging full and extensive registration of cases which came for treatment, because nothing could be known about the incidence of cancer as opposed to its mortality until registration had been encouraged over a number of years. Many quarters urged that suffering could be saved by educating the public in the diagnosis and treatment of cancer, but the Ministry was faced with deeply divided opinion in responsible medical quarters. It had been pointed out that publicity would alarm the public and increase the widespread fear of cancer. Consulting-rooms would be swamped with frightened people, and overworked general practitioners would have still more thrown upon them. The demand for beds in hospitals would increase and would place an intolerable burden on the resources. It would be wrong to have a national campaign based on fear. The Ministry's Cancer and Radiotherapy Advisory Committee had eventually advised against a cancer campaign addressed directly to the public.

Propaganda by Local Authorities

That reply did not imply that local health authorities should omit reference to cancer in their general health propaganda. A good deal could be done by a more restrained type of information conveyed by local health authorities and by the now renowned voluntary associations. The Government was considering with its advisers how great a strain a publicity campaign would put on local facilities and whether such a campaign would achieve the results all desired. She did not believe that the mere spending of money would bring results not at present attained. Cancer research was world-wide, and there was no "iron

curtain" in medical research. Vast sums spent in the United States had brought them no nearer a solution than our own research. It was fair to say that should any country discover a cure it would be internationally shared. It was impossible to assess the total sums spent. The report of the Medical Research Council for 1950–1 said advance in cancer research depended upon almost every branch of medical investigation and upon many other branches of science, and the Council would this year spend £410,000 on cancer research, including £150,000 for financing the research activities of the Royal Cancer Hospital.

Following this, on July 24, Mr. B. JANNER asked whether, in view of W.H.O.'s report that Britain had the highest cancer mortality rate in the world, the Minister would discuss with the M.R.C. the possibility of substantially increasing the volume of research work on the disease. Miss P. HORNSBY-SMITH replied that the extension of cancer research was constantly under review in consultation with the Medical Research Council. It was made clear in this report that no firm conclusions about comparative cancer mortality in different countries could safely be based on the figures in it.

Hospital Ship

Mrs. B. A. CASTLE asked on July 23 why it had been decided to cancel the order for a new 10,000-ton hospital ship, whose keel had already been laid. Mr. J. P. L. THOMAS said this was done because of the need at the present time to devote the limited resources available to improving the fighting efficiency of the Royal Navy. He hoped it would be possible later to proceed with the building of a hospital ship.

Colonial News

On July 23 Captain R. E. D. RYDER asked what progress was being made towards increasing the hospital facilities in the Falkland Islands. Mr. O. LYTTELTON replied that when an extension of the existing hospital in Port Stanley was completed, probably early next year, all foreseeable needs would be met. The new wing would comprise medical, surgical, and maternity wards, private rooms, a children's ward, a theatre and *x*-ray block, a dental block, and accommodation for ancillary services. The original hospital would be used for tuberculosis cases and would have its own staff and services.

Mr. R. W. SORENSEN asked the Secretary of State for the Colonies on the same day why African nurses who have qualified in this country and in some cases are appointed as sisters were compelled to nurse three years in West African hospitals before they could be appointed as sisters in those hospitals. Mr. LYTTELTON replied that the condition was imposed in Nigeria because it was considered that the duties assigned to nursing sisters there were in some respects more responsible than those of a ward sister in this country, and that a period of experience of local conditions was necessary.

Food and Population

Intervening in the House of Lords on July 23 during a discussion on food prices, Lord BOYD-ORR said that in 1900 it was thought that if people had plenty of cheap food to satisfy their hunger the food problem was solved. Since then it had been realized that a more expensive diet was needed to keep people in health. To-day Britain had 49,000,000 mouths to feed, and more expensive food was needed to put into those mouths. It would be difficult to apply birth control in time to prevent the world population reaching 3,500,000,000 or even 4,000,000,000. If the World Health Organization eliminated diseases like malaria, there would be a world explosion of population as there had been in Britain during the nineteenth century. But, if full advantage was taken of modern agricultural and engineering technology, the limit to food production would be elastic. Pakistan could increase its producing acreage from 48,000,000 to 100,000,000 acres. India had 20,000,000 acres of good land which could be brought under cultivation. Britain could offer a food policy to the world and would be surprised at the extent to which it was accepted.

Prescription Charges.—The gross amount accruing from the charge on prescriptions dispensed by chemists in June, 1952, is likely to be of the order of £418,000.

Children in Hospital.—The Minister of Health has instituted a special inquiry on the visiting of child patients by relatives and friends.

Over-large Regions.—One regional hospital board has appointed area committees for its whole area, and three other boards such committees for a part of their regions. The functions of these committees vary, and not all have executive powers.

G.P. Training.—During the quarter ending March 31, 363 doctors in England and Wales were receiving a training grant. In the quarter ending March 31 last year the number was 359.

Entering Private Houses.—Twenty officers of the Board of Control have powers of entry into private houses for the protection of mental patients.

Medico-Legal

APPEAL TO PRIVY COUNCIL FAILS

The appeal of Dr. Arthur James Daly against the finding of the Medical Disciplinary Committee of the G.M.C. that he had been guilty of unprofessional conduct was dismissed by the Judicial Committee of the Privy Council on July 24. Dr. Daly had appeared before the Medical Disciplinary Committee in November, 1951, on the charge that he had committed adultery with a married woman and that he stood in professional relationship with her at all material times. He had been found guilty of the adultery by a decree of the Divorce Division made absolute in January, 1951.[1]

This, the first appeal under the Medical Act, 1950, to the Judicial Committee of the Privy Council, was heard by Lord Porter, Lord Tucker, and Lord Asquith. Appeal to the Judicial Committee must be entered within 28 days, and it can rest on points of law or on points of fact.

In giving judgment Lord Porter said[2] that two problems had been raised: the first as to the action of the legal assessor to the Disciplinary Committee, and the other as to the discretion of the G.M.C. Their Lordships assumed that the assessor had received the leave of the chairman to put the questions he did, in which case they were entirely in order. There was therefore no irregularity in this case. As to the second point, the Disciplinary Committee was entitled to hear not only evidence of the surrounding circumstances but also evidence of previous complaints and findings with regard to the doctor. How much these medical circumstances might affect the mind of the G.M.C. was a matter for them in their discretion. No order was made as to costs.

The direction of the Disciplinary Committee that the doctor's name should be erased from the *Medical Register* takes effect from the time Her Majesty the Queen approves the advice tendered by the Judicial Committee of the Privy Council.

1 *British Medical Journal, Supplement,* December 15, 1951, p. 264.
2 *The Times,* July 25.

The Services

A *Supplement* to the *London Gazette* has announced the following awards:

Third Clasp to the Territorial Efficiency Decoration.—Major F. J. L. Lang, T.D., R.A.M.C.

First and Second Clasps to the Territorial Efficiency Decoration.—Major (Honorary Colonel) E. W. Ashworth, T.D., R.A.M.C.

Territorial Efficiency Decoration. — Majors (Honorary Lieutenant-Colonels) T. N. Hart and A. R. Kelsall, R.A.M.C.

Brigadier E. P. N. Creagh, late R.A.M.C., has been appointed a Deputy Director of Medical Services to the Army, and has been granted the temporary rank of Major-General.

Universities and Colleges

UNIVERSITY OF GLASGOW

At a graduation ceremonial on July 5 the following medical degrees were conferred:

M.D.—[1]T. D. V. Lawrie, [1]Nanette H. Nisbet, [1]J. G. Stevenson, [2]J. Harkness, [2]I. W. MacPhee, J. Simpson.

M.B., CH.B.—[3]J. H. Adams, T. G. Anderson, R. L. Andrews, T. W. Baillie, I. A. Bowie, K. D. Boyd, Marion S. Boyd, T. I. Boyd, R. T. Boyle, Janet C. Brash, P. I. Brown, W. M. Buchanan, A. I. Burleigh, T. Cairns, A. R. Cameron, D. Campbell, E. C. Campbell, R. Campbell, W. MacD. Campbell, A. C. Cattanach, D. Cavanagh, T. Chalmers, T. Christie, H. Church, W. G. Clark, J. G. Clarkson, J. Cleat, Anne M. Cormack, T. C. Coyle, J. Diamond, Elspeth S. Dickie, J. D. Dickson, T. H. P. Dippie, J. R. Donald, J. M. Dubé, [2]H. L. Duthie, C. Edwards, J. R. Evans, J. S. Ferguson, J. A. L. Finch, G. S. Findlay, J. S. Findlay, D. H. Finlayson, D. J. B. Fletcher, N. C. Frame, W. T. Frame, G. A. Garrick, A. B. N. Gilfedder, D. Glover, A. G. Graham, T. D. Grant, Sheila C. Gray, W. McW. Gray, A. B. Gwan-Nulla, K. H. Haddow, T. G. Haddow, Isabel W. Haldane, W. Hamilton, Sheila C. A. Stewart (formerly Harris), D. Y. McD. Hart, W. McQ. Hay, P. J. Hilley, [2]Doreen L. Ireland, A. Jamieson, [2]G. M. Johnstone, D. L. B. H. Jones, H. Kay, D. Keown, W. G. Kilpatrick, D. M. Kirkwood, [2]T. D. Lightbody, [2]W. J. Lockie, Marjorie C. E. MacBeath, I. N. McCulloch, J. McDonald, W. M. McFarlan, W. McIntosh, Margaret Macintyre, J. R. McIver, Jean M. MacKay, G. B. McKelvie, A. MacL. MacKenzie, A. F. F. McLean, E. S. MacLean, J. W. McLellan, K. K. MacLeod, J. McMichael, R. M. Macneill, G. P. McNicol, F. T. MacVicar, H. K. Mason, Sheila M. Y. Maxwell, P. E. Michaelides, Janet B. Mitchell, J. H. Mitchell, W. C. Moffat, D. D. Moir, D. Montgomery, Sasha R. Morris, M. S. Muir, I. P. C. Murray, G. Neilson, D. H. Nimmo, Helen B. O'Hea, A. MacK. Orcharton, S. H. R. Palmer, T. Park, I. Paterson, J. Rankin, Ruth I. Rankin, R. Rankine, I O. Roxburgh, J. S. Roxburgh, J. Ruffell, I. S. Scott, K. B. Scott, R. Shulman, J. A. Smith, R. A. Stark, Margaret P. D. Steen, W. A. Stevenson, I. G. Stewart, J. G. Stewart, R. C. Taylor, Ann R. Templeton, J. Tevendale, Anne C. E. Thompson, Mary F. Thomson, [2]G. C. Timbury, A. P. Walker, [2]F. C. Walker, W. H. R. Waters, J. R. Watson, W. A. K. Weir, [3]J. W. Whitelaw, B. F. Whiteley, Miss Christian F. Whyte, A. C. Wilson, Audrey M. S. Wilson, D. G. Wilson, W. Wilson, H. L. C. Young, J. M. M. Young.

The Brunton Memorial Prize for the most distinguished graduate in medicine in 1951–2 was awarded to J. H. Adams.

The following diplomas were awarded on June 30:

D.P.H.—Elspeth V. Beveridge, J. M. Boyd, D. H. Gawith, Mary E. Hamilton, J. H. Henderson, Ella Macdonald, M. Park, J. J. Prag, H. K. Rose, Hope B. T. Scott, A. G. Sked, W. D. Wilson.

[1]With high commendation. [2]With commendation. [3]With honours.

UNIVERSITY OF LONDON

The following candidates at the London School of Hygiene and Tropical Medicine have been approved at the examinations indicated:

ACADEMIC POSTGRADUATE DIPLOMA IN PUBLIC HEALTH.—M. Abbas, Mignon B. S. M. Alexander, P. A. Allsopp, J. D. B. Andrews, C. H. J. Baker, T. D. Blott, W. T. Buckle, L. J. Clapham, J. Clarke-Taylor, T. E. J. de Fonseka, W. E. Denbow, N. R. E. Fendall, A. McD. Gillespie, G. R. Gunn, A. T. Halliday, C. V. Harries, F. J. W. Hooper, Z. El A. Ibrahim, D. N. Keys, H. T. Knights, *J. A. H. Lee, J. I. Lesh, J. C. G. Lockyer, E. Losonczi, J. F. Lucey, Betty J. McConnell, *Sheila C. MacGregor, D. K. MacTaggart, June M. MacTaggart, S. L. Malhotra, R. Maycock, H. B. M. Murphy, B. B. G. Nehaul, J. A. B. Nicholson, D. A. Parker, A. G. Poulsen-Hansen, M. J. Rayner, Myrtle V. Richards, J. M. D. Roberts, Kathleen I. Scott, D. F. S. Shaw, *J. F. Skone, F. Summers, V. M. S. Thevathasan, A. L. Thrower, Elza H. Todd, *J. N. Twohig, A. J. Walker, *M. D. Warren, *A. Yarrow.

ACADEMIC POSTGRADUATE DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—P. A. Cooper, B. O. L. Duke, E. B. Harvey, J. Newsome, R. T. Scholes.

*Awarded a mark of distinction.

UNIVERSITY OF BIRMINGHAM

Professor Humphrey F. Humphreys has been appointed Vice-Chancellor of the University for one year from October 1.

UNIVERSITY OF SHEFFIELD

Drs. I. J. MacQueen and R. S. Sneath have been appointed full-time demonstrators in anatomy and Dr. E. H. Gillespie part-time honorary lecturer in bacteriology.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At a meeting of the Council of the College held on July 10 the following hospitals were recognized under paragraph 23 of the F.R.C.S. regulations: Cambridge Military Hospital, Aldershot, three senior house officers, all for six months. Crumpsall Hospital, Manchester, senior registrar in general surgery, for 12 months; two registrars in general surgery, for 12 months; *for six months:* one senior house-surgeon (orthopaedics); one house-surgeon (orthopaedics); two house-surgeons (general surgery) (decennial revision). Victoria Memorial Jewish Hospital, Manchester, resident surgical officer and two junior house-surgeons, all for six months (decennial revision). Northern Hospital, Manchester, resident surgical officer (registrar status) and one house-surgeon, both for six months. General Hospital, Margate, senior house officer, for six months (additional recognition). Ballochmyle Hospital, Mauchline, senior house officer and junior house officer, both for six months. General Hospital, Ramsgate, senior house officer, for six months (additional recognition). Sedgefield General Hospital, house-surgeon (general surgery); orthopaedic registrar and orthopaedic house-surgeon, all for six months. Queen Mary's Hospital, Sidcup, senior house officer (surgical); senior house officer (orthopaedic), and three house-surgeons, all for six months (confirmation of temporary recognition). Swansea Hospital, senior house officer for oto-laryngology (under paragraph 23c of the regulations); senior house officer for ophthalmology (under paragraph 23b of the regulations).

It was agreed that the College tie might be worn by (*a*) Fellows and Members of the College, (*b*) Fellows and Licentiates in Dental Surgery, (*c*) Fellows of the Faculty of Anaesthetists, (*d*) holders of the special diplomas granted by the Royal College through the Conjoint Board, (*e*) donors of £50 and upwards to the restoration fund, (*f*) any employee of the College whom the Council may from time to time permit, and (*g*) postgraduate students attending educational courses at the College.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At a quarterly meeting of the College, held on July 22, with the President, Dr. W. A. Alexander, in the chair, the following were elected Fellows of the College: D. Y. May, M. S. Zan, W. J. G. Barrie, J. W. Rae.

The following were elected Members of the College: A. F. S. Perera, M. A. Khan, W. S. Watson, W. J. Abel, N. K. Mitra, A. Bogdan, G. H. Templeman, A. Jarrett, M. W. J. Boyd, N. S. Chalk, P. K. Krishnankutti, S. P. Jha, J. B. Cromie, H. G. Morgan, C. D. R. Pengelly, H. Altman, Eveline P. Forbes, L. Schamroth, L. H. Mofflin, P. G. Aungle, Janet L. P. Hunter.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

At a meeting of the College held on July 21, with Professor Walter Mercer, President, in the chair, the following candidates, having passed the requisite examinations, were admitted Fellows: V. P. Amato, M. P. Amin, H. Banaji, A. C. Bhandhela, P. B. Bharucha, J. A. L. Clark, C. J. R. Conacher, Rosemary H. MacN. Davie, F. J. Gruar, A. A. Hammouda, J. M. Mayer, A. H. G. Munro, N. R. Patel, A. D. Roy, M. Schaffer, W. Seright, B. L. Shaff, A. H. Shouman, E. M. Sparrow, K. S. Stewart, J. G. Stonham, W. Wilson.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

The following candidates for the Diploma in Anaesthetics were successful at the examination held by the Irish Conjoint Board in May: H. Raferty, Z. Lett, P. K. Storah, W. P. Lee, S. Ponnambalam, A. Crehan, A. B. Bull, T. A. Brown, M. McC. Burrows.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION

The following candidates have been approved at the examination indicated:

D.P.M.—*Part I:* U. B. H. Baruch, D. R. Moore, Margaret E. Morgan, P. R. Needham, H. I. H. Porcher, B. B. Zeitlyn. *Part II:* G. L. Davies, Vera Holdway.

INFECTIOUS DISEASES AND VITAL STATISTICS

Summary for British Isles for week ending **July 12** (No. 28) and corresponding week 1951.

Figures of *cases* are for the countries shown and London administrative county. Figures of *deaths* and *births* are for the 160 great towns in England and Wales (London included), London administrative county, the 17 principal towns in Scotland, the 10 principal towns in Northern Ireland, and the 14 principal towns in Eire.

A blank space denotes disease not notifiable or no return available.

The table is based on information supplied by the Registrars-General of England and Wales, Scotland, N. Ireland, and Eire, the Ministry of Health and Local Government of N. Ireland, and the Department of Health of Eire.

CASES in Countries and London	1952					1951				
	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire
Diphtheria	33	2	9	1	3	35	2	5	1	1
Dysentery	151	28	75	7	2	292	59	82	5	1
Encephalitis, acute	3	0	1	0		12	0	0	0	
Enteric fever:										
Typhoid	3	0	2	1		4	0	1	0	1
Paratyphoid	25	0	2(B)	0		29	3	0	1	1
Food-poisoning	144	8		0		199	21		2	
Infective enteritis or diarrhoea under 2 years				15	29				8	34
Measles*	7,541	791	105	251	248	7,662	187	176	144	162
Meningococcal infection	24	2	14	1		33	2	15	2	2
Ophthalmia neonatorum	30	7	8	0		38	4	8	0	
Pneumonia†	329	16	147	0				116		
Poliomyelitis, acute:										
Paralytic	78	7	6	4		50	1	21	2	0
Non-paralytic	41	1				70	3			
Puerperal fever§	276	49	16	1	2	92	14	8	3	0
Scarlet fever	1,038	93	182	14	50	802	87	89	14	34
Tuberculosis:										
Respiratory			111	32				180	27	
Non-respiratory			37	12				37	16	
Whooping-cough	2,242	105	127	56	91	3,277	193	265	37	104

DEATHS in Great Towns	1952					1951				
	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire
Diphtheria	0	0		0		*0*	0	*0*	0	0
Dysentery	2	1		0			0		0	
Encephalitis, acute		1					0			0
Enteric fever	0	0		0		*1*	0	*0*	0	
Infective enteritis or diarrhoea under 2 years	5		1	1		*5*		*0*	1	0
Influenza	5	3		0		*0*	1	*1*	0	0
Measles		0		0			0	*0*	0	0
Meningococcal infection		0					1	*0*		
Pneumonia	119	18		8		*129*	19		7	3
Poliomyelitis, acute	4	2				*0*	0			0
Scarlet fever		0		0			0	*0*	0	0
Tuberculosis:										
Respiratory	98	13	8	3		*126*	15	*17*	2	11
Non-respiratory		3	4	0			3	*1*	3	4
Whooping-cough	2	0		0		*3*	1	*1*	1	2
Deaths 0–1 year	200	18	28	7		*198*	21	*21*	4	12
Deaths (excluding stillbirths)	4,192	607	467	99		*4,027*	679	*452*	100	136
LIVE BIRTHS	7,737	1217	902	192		*7,214*	1188	*857*	208	333
STILLBIRTHS	174	16	24			*184*	22	*15*		

* Measles not notifiable in Scotland, whence returns are approximate.
† Includes primary and influenzal pneumonia.
§ Includes puerperal pyrexia.

Vital Statistics

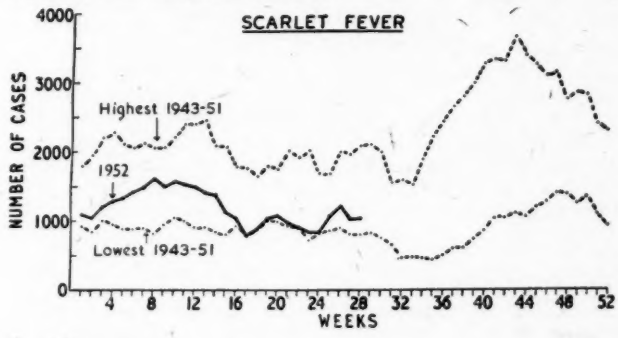
Poliomyelitis

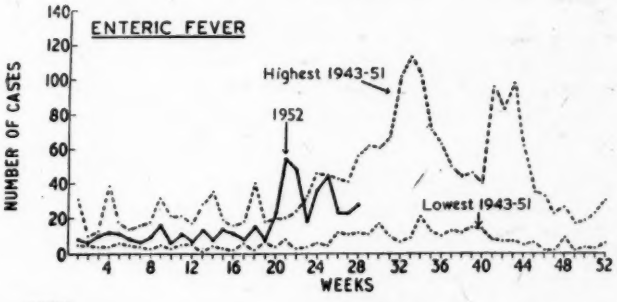
Notifications in the week ending July 19 (29th week of the year) were as follows (figures for the previous week in parentheses): paralytic, 104 (78); non-paralytic, 59 (41); total, 163 (119).

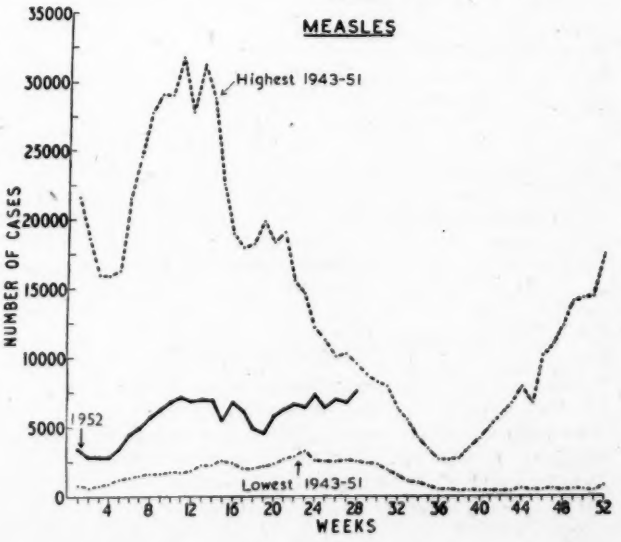
Up to and including the 29th week the following numbers of cases had been notified in the districts shown (with incidence per 100.000 in parentheses): Gateshead C.B., 61 (55.2); Felling U.D.C., 21 (83.3); Woolwich Met.B., 17 (11.35); Newcastle-upon-Tyne C.B., 32 (11.0); Whickham U.D.C., 13 (61.03); Blyth (Suffolk) R.D., 12 (46.15); Malvern U.D.C., 10 (51.03); Yeovil R.D., 18 (102.0).

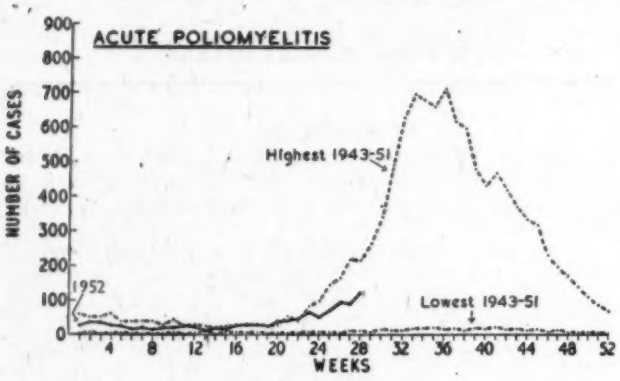
Graphs of Infectious Diseases

The graphs below show the uncorrected numbers of cases of certain diseases notified weekly in England and Wales. Highest and lowest figures reported during the nine years 1943–51 are shown thus -------, the figures for 1952 thus ————. Except for the curves showing notifications in 1952, the graphs were prepared at the Department of Medical Statistics and Epidemiology, London School of Hygiene and Tropical Medicine.









Infectious Diseases

In England and Wales during the week ending July 12 increases were recorded in the number of notifications of measles 821 and acute poliomyelitis 33, and decreases were reported for whooping-cough 102 and dysentery 29.

The increase in the incidence of measles was mainly in the London area and the North Country. The largest rises during the week were Yorkshire West Riding 265, London 186, Essex 124, and Lancashire 115. Only small changes were recorded in the local incidence of whooping-cough. No changes occurred in the local trends of scarlet fever, and the notifications for the country were only 2 more than in the preceding week. The number of notifications of diphtheria was 3 more than in the preceding week.

The notifications of paratyphoid fever were 4 more than in the previous week. An outbreak involving 7 persons was notified in Pembrokeshire (Fishguard and Goodwick U.D. 5) and 6 further cases were notified from the outbreak in Glamorganshire.

The number of notifications of acute poliomyelitis was 17 more for paralytic and 16 more for non-paralytic cases than in the preceding week. The largest centres of infection were Durham 27 (Gateshead C.B. 11, Felling U.D. 5, West Hartlepool C.B. 3), Northumberland 11 (Newcastle-upon-Tyne C.B. 6), Yorkshire West Riding 9 (Leeds C.B. 3), London 8 (Woolwich 4), Surrey 6, Lancashire 6, Middlesex 5, and Kent 5.

The largest returns of dysentery were Lancashire 38 (Manchester C.B. 18), London 28, and Durham 12.

Quarterly Returns for Eire

The birth rate during the March quarter of 1952 was 21.8 per 1,000 of the population, being 0.9 above the rate for the first quarter of 1951. The infant mortality was 55 per 1,000 registered births, and was the lowest rate recorded for a first quarter, being 2 below the previous low level of 1949. Maternal mortality was 1.2 per 1,000 registered births, compared with 0.9 for the preceding first quarter. The general death rate was 14.4 per 1,000 of the population, and was 7.7 below the rate for the first quarter of 1951.

Deaths from the principal epidemic diseases included 88 from influenza, 38 from gastro-enteritis under 2 years of age, 29 from whooping-cough, 6 from measles, 3 from diphtheria, and 3 from scarlet fever. Deaths attributed to tuberculosis numbered 402 from respiratory and 99 from other forms of tuberculosis, and were 122 fewer for the former and 2 more for the latter than the number registered in the March quarter of 1951.

Stillbirths and Social Class

An analysis of stillbirth rates in Scotland for 1946–50 by Dr. P. L. McKinlay (*Health Bulletin*, July, 1952) shows that the stillbirth rate in social Class I was half that in social Class V. Though the stillbirth rate is influenced by maternal age and parity, corrections required to account for these factors are negligible. The following were the stillbirth rates per 1,000 total births, by social classes in Scotland in 1946–50, based on 487,372 total births and 13,996 stillbirths: Class I, 17.92; Class II, 25.24; Class III, 27.59; Class IV, 30.72; Class V, 35.69.

Divorce Rates

In nearly all countries annual divorce rates are higher than they were before the war, but most have declined since the peaks attained in 1945–6. According to figures given in the Metropolitan Life Insurance Company's *Statistical Bulletin* (June, 1952) the provisional figures for 1950 show that the U.S.A. heads the list with a divorce rate of 2.5 per thousand population. It is followed by Israel (Jewish population only), with 2.1, and Denmark, Puerto Rico, and Western Germany, with 1.6. The rate in England and Wales was 0.7 and in Scotland 0.4. In New Zealand it was 0.9, and in Canada 0.4. The 1950 rate for Australia is not available, but it was 0.8 in 1949.

England and Wales Second Quarter

The infant mortality rate of 25.1 (provisional) per 1,000 related live births was the lowest ever recorded for the second quarter for England and Wales. The corresponding rate last year was 28.7. The stillbirth rate of 22.4 per 1,000 total births was also a low record, being 0.1 below the corresponding rate of 22.5 last year. The death rate was 10.6 per 1,000 population; it was 0.5 below the corresponding rate last year and 1.0 below that for 1938.

During the quarter there were 174,089 live births, 3,995 stillbirths, 4,290 deaths of infants under 1 year, and 115,406 deaths at all ages. All figures are provisional.—*Registrar-General's Weekly Return*, No. 29.

Week Ending July 19

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,038, whooping-cough 2,206, diphtheria 25, measles 7,225, acute pneumonia 259, acute poliomyelitis 163, dysentery 140, paratyphoid fever 39, and typhoid fever 2.

Medical News

P.R.C.O.G.—Mr. Arthur A. Gemmell, gynaecological and obstetric surgeon to the United Liverpool Hospitals, was elected President of the Royal College of Obstetricians and Gynaecologists on July 26, in succession to Dame Hilda Lloyd, and will assume office in October.

Tenth International Congress of Dermatology.—The Duke of Gloucester, accompanied by the Duchess of Gloucester, opened the tenth International Congress of Dermatology at Friends House on Monday, July 21. The President of the Congress, Sir Archibald Gray, was in the chair. His Royal Highness said that the first congress was held 63 years ago in Paris, and referred briefly to the impact on dermatology of biochemistry, endocrinology, and the antibiotics. Miss Hornsby-Smith, Parliamentary Secretary to the Ministry of Health, in welcoming the delegates, said that under the N.H.S. more dermatological clinics had been opened. An increasing number of posts were available for those wishing to specialize in dermatology. Among others who spoke words of welcome to those present were Professor Hugh Bellot, Vice-Chancellor of the University of London, Sir Russell Brain, P.R.C.P., and Dr. J. E. M. Wigley, President of the British Association of Dermatology, who observed that this was the first international congress on the subject to be held in London since 1896; over a thousand dermatologists from various parts of the world were in attendance. On July 24 some 800 delegates and their wives sat down to dinner at Grosvenor House. The President gave the toast "The Crowned Heads and Presidents of the Countries represented at the Congress." In proposing the future of dermatology, Sir Henry Dale

said that to make a sane prediction one must know the past history and present achievements of dermatology. Starting with Robert Willan's and Linnaean's nomenclature dermatology had progressed, till nothing more imposing in the whole range of science was seen than the nomenclature as revealed in the Congress abstracts. Dermatology had played a pioneering part in recognizing infections by independent foreign organisms communicated from outside the body as causes of disease. Already in the earlier half of the nineteenth century dermatologists were identifying and cultivating fungi as causes of disease of the skin and the mucous membranes, before Pasteur, Lister, and Koch had shown the significance of bacteria in a wider range of internal infections. More recently dermatology had also played a pioneer part in revealing the nature and significance of protozoal, spirochaetal, and virus infections. Facilities for biopsy enabled dermatologists to be early in the application of cellular pathology and morbid histology in the elucidation of clinical observations. He took some satisfaction, Sir Henry said, in noting that anaphylactic and allergic reactions were considered to be due to a reaction of immunity type in membranes or the protoplasm of sensitized cells. He took a sort of paternal pride in observing that the significance of the liberation of histamine at an early stage of such reactions was being recognized by dermatologists. He heartily welcomed the warnings given by dermatologists on the basis of their own experience that histamine would not account for more than a small part of the dermatological reactions with which they dealt. They could now assume that antihistamines would suppress with varying ease the contribution of histamine to these dermal reactions. Some part of the slower and less readily reversible reactions seemed to be controlled by the hormones of the adrenal cortex. Here, surely, was a wide and important field of investigation in experimental pathology and therapeutics. There would nevertheless, he supposed, be for some years many conditions for which the dermatologists could do little but identify them, label them, and apply for their remedy traditional palliatives. The brightest hope for the future of dermatology was that the margin of empirical observation would be reduced by a scientific aetiology and a rational and effective therapeutics based upon it—the outcome of the combined efforts of those who practised the specialty and those who worked in contiguous departments of scientific endeavour. After Sir Henry Dale had spoken, the following speakers gave their views on the future of dermatology: Professor H. Haxthausen, Denmark; Professor Gay Prieto, Spain; Professor F. Flarer, Italy; Dr. D. M. Pillsbury, U.S.A.; Professor E. Hoffmann, Germany; and Professor L. M. Pautrier, France.

Approved Names for New Drugs.—The G.M.C. has authorized the following names for drugs which hitherto have only had proprietary, or chemical, names: Isoniazid, for *iso*nicotinic acid hydrazide, "rimifon," "tubomel," "pycazide," "mybasan," etc. Penethamate hydriodide, for "estopen," benzylpenicillin 2-diethylaminoethyl ester hydriodide. Pyrimethamine, for "daraprim," 2:4-diamino-5-*p*-chlorophenyl-6-ethylpyrimidine. Hydroxyprocaine, for 2-diethylaminoethyl-4-aminosalicylate. Also alphameprodine, and betameprodine, for certain substituted propionoxy-piperidine derivatives.

Memorial to Liverpool Surgeons.—On July 9 in Liverpool tribute was paid to the memory of three famous orthopaedic surgeons. Mr. Esmond West, President of the Australian Orthopaedic Association, unveiled a plaque which has been fixed to one of the walls of a building in Nelson Street which occupies the site where previously No. 11 Nelson Street stood. This was the house and surgery where Hugh Owen Thomas lived and worked. Thomas's nephew, Robert Jones, later Sir Robert Jones, also practised from this house, and he was followed by the late Professor T. P. McMurray, who assisted Sir Robert Jones for many years. The house was destroyed in 1941 during an air raid. When Thomas was living in this house he had placed over the surgery door a stone inscribed "H.O.T. Surgery. 1866." This stone has been preserved, and after the unveiling of the plaque at Nelson Street Mrs. T. P. McMurray, Professor McMurray's widow, unveiled it in its new position on the wall of the Library of Orthopaedic Surgery (the Hugh Owen Thomas and Robert Jones Memorial Library), established largely by the efforts of Professor McMurray, at the Liverpool Medical Institution. These ceremonies were attended by many overseas orthopaedic surgeons who had recently been in London for the Joint Meeting of the Orthopaedic Associations of the English-Speaking World.

Medicine Among Aboriginal Peoples.—An exhibition of "The Medicine of Aboriginal Peoples in the British Commonwealth" was opened last month at the Wellcome Historical Medical Museum, 28, Portman Square, London. Lord Webb-Johnson, who spoke at the opening ceremony, paid tribute to the great assiduity of the late Sir Henry Wellcome as a collector, and to the splendid use now being made of the Wellcome collection by Dr. E. Ashworth Underwood, the director of the museum. He described the exhibition as being of enormous interest to historians, anthropologists, and doctors. The catalogue to the exhibition contains a valuable introductory essay by Dr. Underwood on the medicine of aboriginal peoples, who seldom attribute sickness to natural causes but regard it as the action of a god, a spirit, an enemy, or some other external agent. Treatment calls for propitiation of gods, exorcism of spirits, and elimination of other possible causes. The items are displayed under the following headings: aetiology, pathology, divination and diagnosis, the medicine-man and his equipment, non-rational treatment, infliction of wounds, surgery, artificial deformation, drugs, stimulants and poisons, protective appliances, personal and domestic hygiene, amulets, ceremonial and ritual art. Among much that is bizarre there are many fine examples of native art and craftsmanship. The exhibition will remain open for about six months.

Standard for Crash Helmets.—The Personal Safety Equipment Standards Committee of the British Standards Institution has just prepared a specification for crash helmets for motor-cyclists (B.S. 1869, 1952, price 2s. 6d.), which includes two practical hints. Helmets with draw-lace adjustments must be worn with the draw-lace tied tightly, so that a crash will not displace it. For speedway racing the helmet should be worn very low on the head, together with a separate loose hard leather collar covering the neck completely.

B.M.A. Film Catalogue.—The many films now available in the B.M.A. Film Library are listed in a catalogue (price 5s.) obtainable from the Secretary, B.M.A. House, Tavistock Square, London, W.C.1. It includes technical information about each film, a synopsis of what it depicts, who made it, and the type of audience for whom it is intended.

Australian Fellowship in Virology.—A fellowship worth £A.1.000 is offered to students in any branch of virology by the British Memorial Fund established in Victoria by public subscription. The fellowship is a gesture of "loyalty, gratitude, and affection" to the British people in recognition of their "role in saving civilization in the second world war." It provides for 10 months' study in Victoria for the selected candidate, and covers all travelling and living expenses during the period. Accommodation will be arranged by the Fund. Wives and children are welcomed, but no extra expenses can be paid to cover them. The upper age limit, for both men and women, is 35. The lower limit is 25. Applicants must be of British stock of 10 years' residence in the United Kingdom. The fellowship is open to graduates in medicine or science under the age of 35 who contemplate a career in research or teaching or who have already had some research experience in a relevant field of microbiology or biochemistry. Study will be at the Walter and Eliza Hall Institute, Melbourne, chiefly in the field of virus diseases. Full details can be obtained from Sir John Lienhop, Victoria House, Strand, W.C.2. Applications will be received during the next three weeks. Simul-

taneously with the virology fellowship similar fellowships are being offered by the Fund for natural science, industrial research, and agriculture. The same conditions apply in each case.

Opening of New Plastic Surgery Unit.—The new accommodation for the plastic unit at St. Charles' Hospital was formally opened on July 16 by Sir Harold Gillies, who has consented to the unit and its two new wards bearing his name. The original unit at the hospital was established by him. Introducing Sir Harold, Mr. E. F. Hyatt, the chairman of the house committee, referred to the fact that it was now a busy general hospital with a full range of specialist units. A vote of thanks was proposed by Alderman Frederick Lawrence, the chairman of the hospital management committee, and seconded by Mr. Patrick Clarkson, surgeon in charge of the ward. Dr. H. R. C. Macaulay, senior administrative medical officer to the North-west Metropolitan Regional Hospital Board, also spoke.

Scottish Medical Research Fund?—Some of the endowment funds of Scottish former voluntary hospitals now part of the N.H.S. should be set aside as a Scottish Medical Research Fund administered by special trustees working with the Advisory Committee on Medical Research in Scotland. The total capital involved is about £13m., and it is thought that £120,000 would be a fair fraction of the annual income to set aside for promoting research in the widest sense. The proposal is made by the Hospital Endowments Commission (chairman, Sir Sydney A. Smith), in a memorandum to the Secretary of State for Scotland, just published as a White Paper (H.M.S.O., price 6d.).

NEW ISSUES

British Journal of Social Medicine.—The next issue of this journal (Vol. 6, No. 3) will be available in a week's time. The principal contents will include:

SOME EPIDEMIOLOGICAL ASPECTS OF ACUTE RHEUMATISM. D. Hewitt and A. Stewart.

DYSPLASTIC GROWTH DIFFERENTIALS IN PATIENTS WITH PSYCHIATRIC DISORDERS. STUDIES ON THE MORPHOLOGY OF MATURITY. J. W. Lovett Doust.

ASSOCIATION OF CONGENITAL MALFORMATION OF THE HEART WITH BIRTH RANK AND MATERNAL AGE. B. MacMahon.

OBSERVATIONS ON ALL BIRTHS (23,970) IN BIRMINGHAM, 1947. VII: EFFECT OF CHANGING FAMILY SIZE ON INFANT MORTALITY. J. R. Gibson and Thomas McKeown.

SELECTIVE LIMITATION OF SIBSHIP SIZE. Lancelot Hogben.

BIRTH WEIGHTS OF SOUTH AFRICAN BABIES. III: SEASONAL VARIATION IN BIRTH WEIGHT. Eva J. Salber and Evelyn S. Bradshaw.

RELATIVE FREQUENCIES AND SEX DISTRIBUTIONS OF HUMAN MULTIPLE BIRTHS. R. G. Record.

INCIDENCE OF COMMON INFECTIONS OF CHILDHOOD. B. Benjamin and A. T. Gore.

Issued quarterly; annual subscription £2 2s., single copy 12s. 6d.

British Journal of Ophthalmology.—The next issue of this journal (Vol. 36, No. 8) will be available in a week's time. The principal contents will include:

USES AND LIMITATIONS OF ACTH AND CORTISONE IN OPHTHALMOLOGY. Alan C. Woods.

CLINICAL METHOD OF OBSERVING CHANGES IN THE RATE OF FLOW OF AQUEOUS HUMOUR IN THE HUMAN EYE. I: NORMAL EYES. Douglas Langley and R. K. MacDonald.

SURVIVAL OF RETINAL ELEMENTS IN SUBCUTANEOUS HOMOGRAFTS. George M. Wyburn and Paul Bacsich.

ELSCHNIG'S CAPSULO-IRIDECTOMY. S. J. H. Miller.

MELANOMA OF THE OPTIC DISK. Maurice W. Paterson.

RELATIONSHIP BETWEEN THE GANGLION CELL LAYER OF THE RETINA AND THE OPTIC NERVE IN THE RAT. J. T. Eayrs.

INJURY TO THE ORBIT. J. Preston Maxwell.

DELAYED RE-FORMATION OF ANTERIOR CHAMBER AFTER TREPHINE OPERATIONS. R. Naccache.

Issued monthly; annual subscription £4 4s., single copy 8s. 6d.

These journals are obtainable from the Publishing Manager, B.M.A. House, Tavistock Square, London, W.C.1.

COMING EVENTS

Internal Medicine Congress.—The second congress of the International Society of Internal Medicine will be held in London from September 15 to 18. A few non-members will be able to attend on payment of a fee. The scientific side of the meeting will consist of symposia on the sprue syndrome, disturbances of fluid and electrolyte balance, aspects of neurotropic virus disease, and antibiotics in man. Full details will be supplied by Sir Harold Boldero, Royal College of Physicians, Pall Mall East, S.W.1.

French Oto-rhino-laryngology Congress.—The 50th French congress will be held in the amphitheatre of the Maison de la Chimie, 28, Rue Saint Dominique, Paris, from October 13 to 16. Subjects to be studied are occupational E.N.T. complaints and cancer of the pyriform sinus. Full details may be obtained from Dr. H. Flurin, 19, Avenue MacMahon, Paris, 17e.

Congress of Medical Women's Federation.—Celebration of the 35th anniversary of the Federation's foundation on October 31 and November 1 and 2 includes a Christine Murrell Memorial Lecture by Dame Hilda Lloyd on "Domiciliary Midwifery" and a discussion on "The Care of the Child in the National Health Service" (morning and afternoon of November 1, at B.M.A. House, W.C.1), and a dinner at Grosvenor House, Park Lane (November 1, at 8 p.m. for 8.30 p.m.). Medical men will be welcomed as guests, and further information and tickets may be obtained from the secretary, Medical Women's Federation, Tavistock House (North), Tavistock Square, London, W.C.1.

Manchester Royal Infirmary Old Residents' Club.—The 11th reunion will be held at the Midland Hotel, Manchester, on Saturday, October 4, in the bicentenary year of the Infirmary. Details of the event have been circulated, but any old resident who has not yet received a notice should communicate at once with the honorary secretary of the Club, c/o Manchester Royal Infirmary, Oxford Road, Manchester, 13.

APPOINTMENTS

APSEY, G. R. M., M.D., D.P.H., Director of Professional Services, St. Luke's Hospital, New York, U.S.A.

EAST ANGLIAN REGIONAL HOSPITAL BOARD.—*Consultant Thoracic Surgeon for Duties in Regional Hospital Board Hospitals and the United Cambridge Hospitals*, C. Parish, M.B., Ch.B., F.R.C.S. *Assistant Chest Physician at Ipswich Chest Clinic*, A. H. C. Couch, M.D., M.R.C.P., D.C.H. *Registrar in Psychiatry, St. Andrew's Mental Hospital, Norwich*, Mrs. Edna F. Birkinshaw (formerly Mackenzie), M.B., B.S., M.R.C.P.

MCGOWAN, DAVID, M.B., Ch.B., D.P.H., Medical Officer of Health, Borough of Weston-super-Mare and Axbridge Rural District Council; Divisional School Medical Officer, North-west Somerset Divisional Executive Area; Area Medical Officer, Weston-super-Mare.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Edney.—On July 14, 1952, at Faversham, Kent, to Mary, wife of Dr. Roy Edney, a daughter.

Fisher.—On July 21, 1952, at Belfast, to Sheila (formerly Penny), wife of Oliver D. Fisher, M.D., M.R.C.P., a son.

Kipling.—On July 18, 1952 at Townend Maternity Home, Hull, to Joan Kipling, M.A., B.M., B.Ch., wife of John Kipling, M.A., D.Phil., B.Sc., a son.

Martin.—On July 23, 1952, to Patricia (formerly Teece), wife of Dr. J. P. Martin, of Bristol, a daughter.

MARRIAGES

Bourhill—Jay.—On July 4, 1952, at Philadelphia, U.S.A., Charles Graham Herries Bourhill, M.B., Ch.B. of Warrington, Lancs, to Marcelle Jay, of Wilmington, Delaware U.S.A.

DEATHS

Black.—On July 23, 1952, at 46, Vicarage Street, Warminster, Wilts, George Black, M.B., C.M., late of Woodford Green, Essex, aged 85.

Kirkhope.—On July 24, 1952, at 4, West Grove Road, Harrogate, Yorks, Alexander Kirkhope, M.B., Ch.B.

Mitchell.—On July 19, 1952, at Ben Mohr, Insch, Aberdeenshire, George Mitchell, M.B., Ch.B., aged 68.

Noble.—On July 22, 1952 at Lowthorpe, 31, Queen's Park Avenue, Bournemouth, Hants, John Allen Noble, M.C., B.M., B.Ch., formerly of Husband's Bosworth, Leics.

Robinson.—On July 16, 1952, at his home, 20, Park Row, Nottingham, George Edward James Antoine Robinson, M.C., T.D., M.D., M.S., F.R.C.S.Ed.

Wade.—On July 18, 1952, at Cavendish, Suffolk, Ernest Wentworth Wade, M.D., formerly of Harleston Norfolk, aged 82.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Negative Phase after T.A.B.

Q.—*I have heard that immunization with T.A.B. is followed immediately by a period of lowered resistance to the disease before immunity is built up. Is this so? If it is, what should be done about those likely to be exposed to infection for only a short time—for example, those travelling to Australia by sea?*

A.—The belief that T.A.B. vaccination is followed by a period of lowered resistance rests on the early demonstration by Sir Almroth Wright of what he called the "negative phase" occurring within the first two to three days after an injection of typhoid vaccine, when there is a temporary lowering of opsonic activity in the patient's blood. Whether the patient would, in fact, be more susceptible to infection by the typhoid bacillus during this brief period is doubtful. It is in any case advisable to complete the course of T.A.B. vaccination some days before travelling, as there is often a fair degree of local and sometimes systemic reaction to the injections. It should also be emphasized that anti-typhoid vaccination does not ensure complete protection and the traveller should take all reasonable precautions about what he eats and drinks when passing through areas where enteric fever is more prevalent than it is in Britain or Australia.

Artificial Fallopian Tubes

Q.—*A patient of mine had to have both her Fallopian tubes removed last year owing to pyogenic infection: one had ruptured and the other was just on the point of bursting. Would she be a suitable patient to have artificial tubes inserted? I have heard of this being done, but I do not know with what success. Would she be likely to conceive after their insertion?*

A.—The appendix, and tubes made of amnion, pelvic peritoneum, and plastic materials have all been considered as substitutes for the Fallopian tubes, but for all practical purposes there is as yet no method by which a woman can be supplied with functional artificial oviducts. When both Fallopian tubes have been removed completely the more feasible methods for restoring fertility are either to attempt to create a uterine fistula in one or other cornu, or to implant an ovary into the uterine wall with part of its surface exposed to the uterine cavity (Estes's operation). Neither of these procedures provides more than a negligible chance of successful pregnancy.

German Measles

Q.—*In view of the association between maternal rubella and congenital foetal defects, is there any certain method of establishing whether a given rash is due to rubella? Can the disease occur sine eruptione, and, if so, how can the diagnosis then be made? Does an attack of rubella in childhood confer absolute immunity? Would it be practicable, and, if so, desirable, to infect girls with rubella before marriage, or otherwise to immunize them against the disease?*

A.—Rubella is often very mild in early childhood, and such a mild infection, with a fleeting rash, may easily be missed, so that it is not always possible to say whether an adult has or has not had the disease. The term "modified rubella" has been applied to a syndrome of post-auricular glandular enlargement without rash, but it would be difficult to substantiate such a diagnosis except on epidemiological evidence. The rubella rash may be confused with a modified measles rash or, if it is intense, it may in its later stages closely resemble the rash of scarlet fever, but other features should help in the differential diagnosis. There are no laboratory tests which are pathognomonic of rubella.

Authenticated second attacks of rubella are very rare, and it may be expected that a lasting immunity follows the primary infection, although early relapses have occasionally been reported. Deliberate exposure of children to the infection should be encouraged, provided of course that the mother of the child is not at the same time in the early stages of a pregnancy. Rubella is most infectious immediately before and during the eruption of the rash. In Australia unmarried women have been congregated in camps to have their throats sprayed with rubella virus. Passive protection of a contact in early pregnancy is possible only with large doses of gamma globulin obtained from the serum of convalescent cases of rubella.

Erythema Nodosum

Q.—*What are the present views on the causation of erythema nodosum? If the streptococcus is believed to be an aetiological factor, should cases of erythema nodosum be treated with one of the sulphonamide drugs?*

A.—Erythema nodosum is a clinical entity presenting as an acute febrile illness and to be distinguished from the nodose erythematous lesions sometimes seen with drug eruptions and other toxic erythemata. It is believed to be an allergic reaction to organisms in the blood stream from recent focal and often primary infection. Under the age of puberty about 70% of cases in this country are of tuberculous origin and after that age perhaps 20%. While many other organisms may provoke the reaction, the most common after the tubercle bacillus is the haemolytic streptococcus. In from 10 to 30% of cases frank tuberculosis later develops and erythema nodosum should always be the signal for a careful clinical examination, sputum test, and *x*-ray examination of the chest; inquiry for contact; and subsequent supervision and *x*-ray examination of the chest at intervals. In the cases believed to be due to streptococcal infection there is often a history of a sore throat a week or 10 days previously.

As regards the use of sulphonamides, each case must be treated on its merits. In many streptococcal cases the infection may have run its course by the time the allergic manifestation presents itself, but this will not always be so.

Dancing for the Under-fives

Q.—*Are ballet and tap dancing beneficial, innocuous, or harmful for children under 5 years of age?*

A.—Ballet dancing in moderation is innocuous, and probably beneficial, to the feet of young children, but it should not be practised to excess. It favours the development of the intrinsic muscles of the foot and of the calf muscles, which together are largely responsible for the protection of ligaments and the maintenance of normal bone relationships in the foot. At the same time the general tone and posture of the body as a whole are improved. A foot normal to begin with is unlikely to be altered in shape by a moderate amount of dancing; similarly a foot that is initially flat is likely to remain flat, but the symptoms will often be improved. Harmful effects of ballet dancing are usually due to injury—either a single acute injury or repeated minor strains. Bones, ligaments, muscles, or tendons may be affected, and the anterior part of the foot is especially susceptible owing to the extra stresses to which it is subjected. The commonest individual lesions are foot-strain, metatarsalgia, sesamoiditis, fracture of the medial sesamoid of the hallux, avulsion of the base of the fifth metatarsal, bursitis deep to the tendo calcaneus, and strains of the calf muscles or adductors of the hip. Such injuries for the most part are relatively unimportant and respond readily to rest

and treatment; it is only if dancing is performed excessively and injudiciously that structural changes in the feet are to be feared. This is unlikely to happen in properly conducted classes such as are included in the school curriculum.

Tap dancing similarly is beneficial, possibly more so than ballet dancing, because no abnormal stress is placed upon the anterior part of the foot. The rapid rhythmical movements of a tap dance encourage the proper development and co-ordination of the intrinsic and extrinsic muscles.

Serum Acid Phosphatase Levels

Q.—*(a) Why is the serum acid phosphatase level raised in carcinoma of the prostate? (b) Must there be bone secondaries before it is elevated?*

A.—(*a*) There is no satisfactory explanation for the raised serum acid phosphatase level in carcinoma of the prostate. (*b*) No.

Ointment Bases

Q.—*What are the essential differences between, and individual indications for, the ointment bases listed in the National Formulary, 1952?*

A.—Only four of the ointments included in the *National Formulary, 1952*, can be classified solely as bases: ung. adipis lanae hydrosi, ung. alcoholium lanae, ung. aquosum, and ung. emulsificans. The first three all contain the steroid alcohols obtained from wool fat, and, since these resemble the natural fats of the skin, these ointments are good emollients. They are also readily absorbed and make useful bases for medicaments which are intended to be absorbed. They are thus often used for sex hormones, calciferol, local analgesics, etc. Ung. adipis lanae hydrosi and ung. aquosum are both water-in-oil emulsions, and the difference between them is largely one of consistence. Ung. alcoholium lanae is anhydrous, but is capable of taking up considerable amounts of aqueous liquids, forming water-in-oil emulsions. Ung. emulsificans is also an anhydrous preparation, but aqueous liquids can be incorporated giving an oil-in-water emulsion. Ointments made from this base, especially when emulsified, have the advantage of leaving the skin less greasy when they are rubbed in, and they can much more easily be washed off than fatty or water-in-oil bases. They are readily absorbed. Antiseptics are usually much more active in oil-in-water emulsions than in other types of base. Ointment bases with a wholly fatty base, such as ung. paraffini and ung. simplex of the *British Pharmacopoeia*, are indicated when little or no absorption is required.

Treatment of Fibrositis

Q.—*A man of 28 has severe fibrositis of his shoulders, with large nodules in his trapezii, which prevents his work as a pig farmer and seriously interferes with his sleep. Some relief is obtained with local heat and codeine tablets. He has recently had an arthrodesis for a tuberculous hip-joint, and in the past a renal disorder. There is no obvious source of focal sepsis. What treatment is advised?*

A.—In view of his recent tuberculous hip infection it would be wise to estimate his blood sedimentation rate. If this were found to be raised it would suggest that there was still some activity present, which might be the primary cause of his fibrositis. We must presume that the condition of the chest has been investigated and found to present no evidence of active infection. In the local treatment of the fibrositis, heat and codeine have relieved the pain, as would be expected. To cure the condition, however, it will be necessary actively to disperse the nodules, which will, no doubt, be found on closer examination to be the source of what appears subjectively to the patient to be generalized pain. This can generally be accomplished by injecting accurately into the centre of each 2 to 5 ml. of 1% procaine in saline. The injection should be made rapidly in order to disrupt these localized inflammatory areas. The injections, which may have to be repeated more than once, should be followed up with gradually progressive professional massage aimed at completing the process of dispersing these areas. Aspirin, 10 gr. (0.65 g.), should be given four-hourly during this period, and the addition of small doses of either iodine or thyroid extract may be of additional value. If the patient is overweight it will be necessary to deal with this drastically by means of diet before cure can be expected.

Cold Knees

Q.—*I have a patient, otherwise healthy, who complains of intense coldness of both knees, gradually becoming worse during recent years. Is this symptom a precursor of circulatory disease?*

A.—Measurements of joint temperature indicate that there is little doubt that this area is less responsive than elsewhere to the ordinary mechanism of body temperature maintenance, presumably because of the large amount of bone and the small amount of muscle there. I do not think that the sensation of coldness is a precursor of circulatory disease. Probably it falls into the category of "morbid awareness of physiological states."

The Ship-surgeon's Locker

Q.—*What antibiotics and other drugs with specific actions should be included in the equipment of a ship surgeon for a cruise to Madeira, Brazil, and up the Amazon?*

A.—A supply of sulphonamides, penicillin, streptomycin, aureomycin, and chloramphenicol would be essential. Apart from the diseases which might be encountered in Britain and for which a supply of specific remedies would be necessary, such as are used in practice here, the following disorders might possibly be encountered on such a cruise: (1) yellow fever, for which there is no specific remedy, though it would be important to see that all passengers had been inoculated against it; (2) malaria, for which a supply of quinine, mepacrine, and proguanil should be carried; (3) amoebic dysentery, for which emetine, diiodohydroxyquinoline ("diodoquine"), and carbarsone would be necessary; (4) and Chagas's disease, for which there is no reliable specific therapy.

Boils in the Ear

Q.—*Where can I find information on the treatment of boils in the ear?*

A.—On p. 51 of the book "*Any Questions?*" The book can be obtained for 7s. 6d. (postage 6d.) from the Publishing Manager, B.M.A. House, Tavistock Square, W.C.1.

NOTES AND COMMENTS

Corrections

At the meeting of the Section of Child Health at the Annual Meeting in Dublin, Dr. C. Marcia Hall, speaking of the treatment of tuberculosis in children, said: "Rest in hospital meant rest in bed and from physiotherapy." In our report of this Section Meeting (July 19, p. 154) the word "from" was unfortunately omitted.

In our report of the meeting of the Section of Medicine at Dublin (July 26, p. 213) we should have mentioned that the paper read by Dr. R. Semple was the joint work of Dr. E. Lawson McDonald, Professor A. Kekwick, and Dr. R. Semple.

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